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SERVICE BULLETIN

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> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XVIII No. 1 Washington, D. C. January 1, 1934

ROBERT Y. STUART

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By Henry S. Graves

In the death of Robert Y. Stuart, the profession of forestry has lost one of its stalwart leaders. His rare qualities won recognition and confidence early in his career, and he advanced step by step to the high office of Chief Forester of the United States. His long service with the Government was marked by distinction and by many notable achievements. His life was rich because of the wide esteem and affection in which he was held by all those who came in contact with him. His tragic death came at the pinnacle of his career, when he was handling public problems of great importance and magnitude, with rapidly expanding opportunities for service in forestry. His passing has left a wide gap in the profession, and, too, a void in the hearts of the multitude of men who admired and loved him.

Stuart had a remarkable grasp of the larger problems of forestry. This was in part due to his wide experience and knowledge of conditions throughout the country, and in part because of his powers of perception that enabled him to see beyond the problems with which he was immediately confronted, and to understand the interrelations of forestry with other economic, industrial, and social interests.

He was intensely human in his approach to the problems of forestry. He had high ideals, not merely in forwarding technical practices, but in seeking to make forests of service to communities and to all classes of people. His recognition of practical difficulties that tended to retard forestry did not obscure the end in view or lessen his conviction that they could be overcome.

In his dealings with men and with situations Stuart demonstrated rare wisdom and sound judgment. He was ever courageous in the face of obstacles and refused to be stampeded by pressure. His actions were governed by his convictions, and he was ready to accept whatever consequences might follow when he knew he was right.

It was these traits that gave him the reputation of dependability. He was candid and direct, and everyone knew exactly where he stood. If anything had to be done, he undertook it without hesitation, no matter how difficult. He was given ever increasing responsibilities because he could be relied upon to get things done. And in the performance of his tasks he showed imagination, ingenuity, and persistence.

Stuart was a very simple and modest man, unaffected by the high positions and honors that came to him. His loyalty to the cause, to his organization, and to the public interest was a dominant feature of his character. He was unsparing of himself, always ready to carry more than his share of the load. He gave to his work all that he had, often over-working even when he knew that the effort was beyond his strength.

A further marked trait of Stuart's character was his unfailing consideration of others. He had an intuitive sympathy with the views of others, and with situations in which they might find themselves. Unselfish, almost to a fault, he always sought to give credit, where it was due, to those associated with him. His colleagues were not merely fellow workers but friends. His anxieties were not for himself but for others and for the cause which he represented.

Stuart had a share in much of the development of forestry in the country during his twenty-seven years of service, for almost from the time of his graduation from the Yale School of Forestry in 1906 he was given important responsibilities. He marched steadily in the Forest Service from his first position as Forest Assistant through various positions to Chief Forester. He was called to France as a Captain in the 20th Engineers early in the war and was promoted to the rank of Major, serving through the war with distinction. His work with the Forest Service was interrupted when in 1922 he was selected by Governor Pinchot to be Commissioner of Forestry in Pennsylvania. Later he was advanced to the Governor's Cabinet as Secretary of the newly established Department of Forests and Waters. Returning to the Forest Service in 1927, he served a year as Chief of the Branch of Public Relations; and, because of his abilities, was the logical choice to succeed Colonel Greeley upon his retirement from the Service in 1928.

To recount Major Stuart's achievements during his administration as Chief Forester would be to list the advances of the Forest Service during that period. He considered his every accomplishment as a Forest Service accomplishment, giving without stint the fullest credit to his colleagues for their part. The intensification of the administration of the National Forests, the advances in fire protection on the National Forests and, through Federal cooperation, on State and private lands, the developing of policies of recreation and wild life management and effort to secure more legislative support to meet these problems, the sturdy fight to meet the difficult problems arising out of the depression, the strong support given to research in all fields of forestry, and the progress in raising the technical standards of personnel in the Forest Service, are all features of Stuart's administration. Two great accomplishments will, however, stand out in forest history above those enumerated, namely, the preparation and publication of the Copeland Report, and Stuart's personal part in the organization and development of the Civil Conservation Work. The Copeland Report was the product of the efforts of scores of men in the Service. Nevertheless it was prepared under Stuart's general direction, and would have been impossible without his support and personal participation. The story of Stuart's magnificent work in connection with the Emergency Conservation Work can be told only by those intimately associated with it. His initiative and quick assumption of responsibility, his tact and statemanship in adjusting interdepartmental problems, his swift organization of the work of recruiting forest officers for the Conservation Corps, were responsible for the speed and efficiency in launching one of our greatest forestry undertakings. For all time Stuart's name should stand first in the history of the Civil Conservation Corps.

The men of this generation will revere his memory for his achievements and for his personal character that drew to him in firm affection all those associated with him. The generations that follow will respect his name as that of one of the great foresters who played a large part in laying the foundations of forestry.

"UNCLE SAM'S FOREST RANGERS" GET A REST

On December 28, the 92nd episode of "Uncle Sam's Forest Rangers" was broadcast, winding up the second year of the series on the air. The program is now to have a two-months' vacation, the series to be resumed in the first week of March.

"Uncle Sam's Forest Rangers" has had a decidedly successful run. Ranger Jim, Jerry, and Bess have become familiar characters in thousands of households, and through them thousands have learned something of the work and ideals of the Forest Service. According to the National Broadcasting Company, the rangers' program has brought in one of the largest volumes of "fan mail" of any non-commercial program on its networks. It is noteworthy that of the thousands of letters received, only two letters contained "kicks."

For the past two years, the ranger program has been presented weekly from Chicago by the N. B. C., as a Thursday feature of the National Farm and Home Hour, over a network of 47 stations covering the whole country as far west as Denver. The program was also presented from San Francisco on Mondays as a part of the Western Farm and Home Hour, over the 10 stations of the N. B. C's. western division. It is estimated that 15 million radio sets are within receiving range of the program.

Starting January 4, the National Farm and Home Hour each Thursday is to be devoted to a special conservation program, in which the Forest Service and a number of other conservation agencies will participate. Addresses on various phases of conservation, and a number of other features, are planned. - C. E. Randall

FORESTRY ON THE MARGINS

By R. N. Cunningham, Lake States For. Expt. Sta.

In agriculture, it has long been recognized that there are certain lands which for physical, climatic, economic or other reasons cannot be farmed at a profit. The limit where profitable farming stops, usually determined by trial and error, is spoken of as the "margin", and the poorer land below this limit is called "submarginal". In forestry, undoubtedly the same sort of margin of profitable management exists and we are given every reason to think that the United States, as well as other countries, contains areas of land which are submarginal for timber production.

In agriculture, however, there is another type of margin which is just as well defined but with which we in forestry have so far had little occasion to deal. On even the best of farm land and in the most densely settled regions the amount of machinery, seed, fertilizer, weeding and cultivation which can be profitably put on the land is limited. In other words, agriculture operates under the law of diminishing returns. Up to a certain point -- the "intensive margin" -- it will pay to add this extra work. Beyond this point the extra labor will not be compensated by greater returns. The more plentiful the land and the more costly the cultivation, the sooner this intensive margin is reached, and in America we find that the great bulk of the land is farmed on a rather extensive basis, at least extensive when compared to methods in densely settled European countries, Japan or China.

In forestry, again there is undoubtedly an "intensive margin", beyond which additional labor, be it for pruning, thinning, planting, bug control, or merely intensified protection, will not result in corresponding increased returns. On the best lands, close to markets, this limit will be relatively high and these lands will justify considerable effort to make them fully productive. On the more remote and poorer land, the limit will be low.

The fact that forest land, like agricultural land, is relatively plentiful in this country and cost of intensive development is high, suggests that the great bulk of our forest lands are suited to a fairly extensive type of management -- extensive when compared with Germany, for instance.

Up to the present, these considerations have been of little more than academic interest. Funds for forest management have been so small that any intensive silviculture has been limited to experimental jobs. Now that forest development has been started on public forests in a fairly large way, these points assume real significance.

It is an unfortunate coincidence that the poorest lands, those which are nearest to the margin of productive use, are those which are most available from the standpoint of ownership and are most capable of absorbing manual labor in an unemployment relief undertaking. There is no place in the country where there is more room for building roads and trails than in the remote districts of the Sierras and Rocky Mountains, no place where you can find more infested gooseberries than in the most remote of western forests, nowhere more acres to plant than on the barren sand plains of the South or the Lake States. But are these the areas on which such operations will pay?

It can probably be safely assumed that there is real justification for much more forest development work than is likely to be done on public forests in the near future. The question is merely one of distribution. The need now is for more of an economic approach in our working plans. It is not enough to find out how many acres on the forests are bare enough to be planted. It is more to the point to determine what particular areas will justify the cost of planting. It is not enough to state how many acres of young growth would be improved by thinning, how many acres of scattered white pine would be temporarily insured by currant eradication, how many miles of road would give air-tight protection. The plan that is needed will weigh the results of these undertakings, comparing them with what nature might accomplish herself unassisted or with very modest help, against the costs involved.

The outcome will probably be that it will be found worth while and desirable, as in the case of agriculture, to intensively develop certain choice areas, to modestly encourage nature on large additional areas, and to leave others practically untouched. Probably on the typical American forest unit, good forest management will be desirable, but elaborate improvement programs and refined silvicultural treatment will be submarginal undertakings.

COMPARISON OF NIRA ALLOTMENTS, MEN REPORTED AT WORK DECEMBER 18 AND TOTAL MAN WEEKS OF EMPLOYMENT REPORTED TO DECEMBER 18.

Region	Men reported Dec. 18.	Total Man Weeks of Work reported to Dec. 18. Number	Percent	Revised Net Allotment Percent
1	344	15,510	8.9	14.9
2	1,463	19,206	11.0	4.4
3	1,318	23,964	13.7	8.7
4	400	22,069	12.7	7.3
5	1,626	11,936	6.8	20.9
6	1,488	28,537	16.4	11.9
7	2,279	14,648	8.4	13.2
8	27	232	.1	.3
9	3,189	32,912	18.9	9.9
Research	369	4,736	2.7	7.0
Biol. Survey	152	677	.4	1.1
Total	12,655	174,427	100.0	100.0

Editor, Service Bulletin,
U. S. Forest Service,
Washington, D. C.

Dear Sir:

Referring to "Ye Editor Discovers", Service Bulletin, Oct. 23:

Ye Editor seems to sniff the taint of skullduggery in accounts of the Tillamook fire. "There was a five-day period of rain and fog soon after this fire started" says he sternly. "How come the State or some one didn't put the fire out at this time?" "And that isn"t all", he continues with growing indignation, "Why don't we take this opportunity to educate the public by telling them about all the boners that were pulled? It's a State fire -- this is a swell chance to be objective." "Some one is to blame" says he. "In all that fire, there must have been a mistake somewhere. Out with it! As a seasoned student of fires, I well know that the boys didn't guess right every time. No one ever has. So what are those birds holding out on us?"

Editor, old top, you no doubt are a seasoned student of fire histories. The runs and rhythms of forest fires may continually stream through your head. No doubt they do. But do you think that the public would be interested in all of the errors made in fire suppression, and would you, for example, recommend turning over to the press the minutes of the board of review that sits after a bad fire season in every well regulated Forest Service region? We could, as to these, give more exact information.

As for the reports in which such crimes of suppression were committed -- no report has been submitted. Two or three brief items have been contributed as a matter of news; but nothing complete and no propaganda as yet. At just what point do you suggest introducing the raspberry?

As for the fire, the items contributed clearly indicate a continuous run, until at the end of the second day the area was about 6,000 acres in two large and a number of small fires.

As a seasoned student of fires, you no doubt realize that this indicates the need of 25 or more miles of fire line. The difficult nature of the country is mentioned. A little fast work with a pencil brings conviction that if on each acre, ten stumps, logs, roots, snags or patches of duff were burning, some 60,000 fires would have to be cut, dug or pumped out before the job of mopping up could be called complete. Reduce that to man-days and you have the effort needed to hold the fire. One wonders why a seasoned student couldn't think of this without prompting. Have you ever heard of any organization, in the Service or out, which completed a job like that? As a matter of fact, you have not. It is too much fire.

The Association practically completed trenching the fires with little loss of line -- quite a job, I'd say, and very well done. No doubt at times 40 men went with Tom, and 20 with Dick, when it should have been the other way around. Quite likely, it did not make a nickel's worth of difference. When the blowup came, the line was not lost on the ground. The fire crossed it in the air, and presumably would have done so unless most of those 60,000 burning stumps had been completely extinguished. Mr. McArdle's graphic account (Oct. 9) of what happened between August 15 and Oct. 24 gives all the essentials, but if it will make Ye Editor feel any better, we will add his formula: "a wind came up" and "a spark blew over the line."

As for the effort, 40 men were on the fire in half an hour, 190 men inside of 12 hours, 590 inside of 24 hours. No doubt more men have been assembled quicker at times; still that isn't too bad. The leadership was as good as can be found. Two representatives of the larger owners and the State Forester were in charge, just about as though Granger, Morrell, and Price had gone onto the job. Of course, we observers are full of bright ideas about how this or that might have been done better, just as we would be if Granger, Morrell, and Price, or General Pershing, or the Executive Council of the S. A. F. had done the bossing.

Beyond question, it will be the theme of many spirited debates this winter, when we have more time for it. Quite likely before it is over with, a lot of people's feelings will be hurt in one way or another. But as for educating the public by running into print with the opinion that a great loss was incurred because Warden, or Ranger, or Regional Forester A followed course B instead of course C -- the poor goof -- really, Mr. Editor, would you get behind a movement of that sort? Oh well, perhaps we expect too much of editors.

One effect of the fire was the framing of a bill to be submitted to the extra session of the legislature, which will give the State Forester more authority to close forest areas and control logging -- that, if passed and wisely used, would tend to reduce the probability that fires will start.

A close study of fires in Idaho, Washington, Oregon, California, Pennsylvania, Georgia, Texas, Ohio, and places like that should show that when conditions are just right, fires which get started will out-run, out-guess, out-maneuver, and generally out-do any bunch of men, whether they are paid by Federal, State, or private money. Given the proper coincidence of wind, fuel, moisture content, topography and cause, they are unpreventable. There are a number of places in which, for one reason or another, we have no business trying to raise timber. We will discover others as time goes on. There is not the slightest use in trying to kid the public into believing that all loss from fire is preventable. We -- at least most of us -- know better. In the meantime, I am opposed to the old Russian custom of shooting unsuccessful generals, even to educate the public.

The accompanying contribution was made 9 years ago. The circumstances which called it forth are duplicated some dozens of times every year in every Forest Service region. Why not give it a little subjective analysis?

Sincerely yours,

E. H. MacDaniels, R.6

(The contribution Mac mentions will appear in the next issue. - Ed.)

FIRE HAZARD REDUCED BY EXTRA LAYER OF CIGARETTE PAPER

Tests were recently conducted by the Bureau of Standards of the U. S. Department of Commerce for the purpose of developing a modification of cigarettes which would considerably reduce their fire hazard when discarded and also be acceptable to manufacturer and consumer. A previous study of the fire hazard of cigarettes was made by the Bureau of Standards several years ago, in which the tests proved that cigarettes can start fires when they come in contact with forest duff or grasses.

In the recent tests, tipping of the cigarette was selected as the most practical means of reducing the fire hazard, since it does not affect the burning properties of the untipped portion nor add appreciably to the cost of manufacturing. The tests showed that fires were caused on the average by nine out of ten lighted half-length, untipped, fast-burning cigarettes discarded on grass, forest litter, or duff. The percentage of cases resulting in fires increased somewhat with decrease in relative humidity. In tests with half-length fast-burning cigarettes having tips one inch long of paper similar to that used on this type of cigarette, four fires occurred on the average for every ten trials. With tips of the same length made of the paper used on slow-burning cigarettes, the occurrence of fire in the exposed materials was reduced to one out of four trials.

The placing of tips on cigarettes is practical from the manufacturing standpoint, the Bureau of Standards feels, and if made of cigarette paper they apparently introduce little cause for objection on the part of the user.

A report of the tests by F. M. Hoffheins of the Bureau of Standards appeared in the Quarterly, October 1933, of the National Fire Protection Association and has been reprinted by that association. Copies of the report, which is entitled "Fire Hazard Tests with Cigarettes" may be obtained from the National Fire Protection Association, 60 Batterymarch Street, Boston, Mass. The price is 15 cents each.

YE EDITOR DISCOVERS

Under the Civil Works Administration projects, the Forest Service has been authorized to employ 31,551 persons, the great majority of whom will be assigned to improvement work on the National Forests. The men will be requisitioned from the State C. W. A. offices, and will be transported daily to and from their homes. About 2,000 will be employed in Forest Experiment Station units. Employment will be on the basis of a two-and-one-half month period to end February 15. The allotment by Regions and the number at work on December 15 are as follows:

Region	Total men authorized	Men at work December 15
1	75	74
2	10	0
3	1,265	880
4	25	22
5	8,000	4,990
6	93	93
7	8,161	2,346
8	0	0
9	13,841	6,146
D.C.	81	14
	31,551	14,565

The reason given, in almost every instance, for more men not having been put to work was that the State authorities had not assigned to the Forest Service as many men as we were prepared to use. This situation is being rapidly corrected, and it is expected that by the time the next weekly report is submitted practically all of the quota will have been put to work. The central C. W. A. has on two occasions informally stated that an additional large number of employees will no doubt be authorized on C. W. projects after Congress convenes, and that the Forest Service should be prepared to take as many men as it can properly handle.

One of the greatest problems being encountered in connection with C. W. projects is in the Southern States, where the local authorities have not yet oriented themselves to the "New Deal" wage rates and have insisted on paying 20 and 30 cents per hour for a six-hour day and a five-day week rather than the 40 cents per hour NIRA rate for the southern zone. The central C. W. A. has advised the Forest Service to stand pat and pay not less than the standard rate unless our men are engaged in actual highway construction, in which event it may be necessary to pay the same rate as paid on State highway work.

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Authorization by Director Fechner on October 21 to purchase additional heavy machinery for ECW work to the extent of $1,508,640 for the National Forest and State and private camps resulted in extensive purchases which are now complete. Orders for trucks needed after the camps were moved from summer to winter locations were held up for over a month because Ford was the low bidder and his status under the NRA was dubious. During this interval there must have been many camps in the East largely or perhaps wholly without trucks needed for commuting enrolled men from camp to their jobs. Ford's status was finally cleared up and the orders were all placed some weeks ago.

The last item purchased was compressors. The bids for compressors which were opened a little over a month ago called for prices some 68 percent higher than those paid during the summer. This seemed more of an increase than could possibly be justified by NRA codes and advanced cost of labor and materials. The Forest Service therefore refused to recommend awards under these bids. There the matter hung for weeks. It was found that to make purchases of used compressors would be very satisfactory from the price standpoint. From a broad re-employment viewpoint, however, it was highly preferable to purchase new machinery. The effect on re-employment of labor would have been very much less indeed if used compressors had been purchased. After extensive consideration by representatives of the NRA and considerable negotiation with representatives of the compressor industry, the prices originally bid were reduced 15 percent and orders were placed for immediate delivery of new compressors.

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The conference of the lumber and timber products industries on Article X of the NRA timber code, scheduled to reconvene on December 14, has been postponed until the week of January 22. So little time elapsed between the October meeting and the December date, especially with the holiday season coming on, that it was thought best to give the lumber code divisions ample opportunity to prepare their proposed forestry measures.

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Subscriptions to the American Red Cross for the year 1934 by members of the Washington Office amounted to $118.

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Establishment of a branch of Forestry in the Office of National Parks, Buildings, and Reservations, in the Department of the Interior, was recently announced by Arno B. Cammerer, Director of that Bureau. John D. Coffman was appointed Chief Forester.

Mr. Coffman has had long experience in forest protection and administrative work. For the past five years he has been fire control expert of the National Park Service, with headquarters in Berkeley, California. For 19 years previous to that he was a member of the Forest Service, the last 12 years of that time serving as Supervisor of the California National Forest, now named the Mendocino National Forest. Mr. Coffman has been in Washington since early last April, assisting in the administration of the emergency conservation program in the National Parks and Monuments.

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C. J. Whitfield, Ecologist of the Southwestern Forest Experiment Station, has resigned from the Forest Service to take a position with the new soil erosion division in the Department of the Interior.

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FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

SERVICE BULLETIN

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WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES. WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER Theodore Roosevelt

Vol. XV111 No. 2 WASHINGTON, D. C. January 15, 1934

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FIVE AND TWENTY YEARS AGO

A period of twenty-five years having passed since the Forest Service was divided into six districts and an army of forest workers left Washington for the field, we believe that the following item from the Washington Evening Star of November 27, 1908, will be of interest.

"Busy scenes mark the last days of the preparation for moving about 75 percent of the United States Forest Service force in Washington to the six field district headquarters in the Far West. The foresters, clerks and stenographers who are to go to the six cities which are to be the district headquarters will all have started for the field by December 1, leaving a force of only about 200 in the Washington office. The 377 who go to the West make up the force at the six offices in Denver, Colo.; Ogden, Utah; Missoula, Mont.; Albuquerque, N.M.; San Francisco, Cal., and Portland, Ore. Work at each headquarters will be begun promptly December 1 by those who have gone in advance to open the office, and by the end of next week it is expected that all will have arrived and completed the force in each city.

"The new field organization of the Forest Service will greatly facilitate the use of the national forests by the people. It means that the national forest business which formerly was transacted in Washington will be handled by officers on or near the ground. The establishment of the district headquarters is the culmination of a plan toward which the Forest Service has been working steadily since it took charge of the national forests.

"Duties of District Foresters

"Each national forest will be in charge of a district forester. The work at district headquarters will be distributed among four offices - operation, grazing, silviculture and products - each equipped with men of special training for the work of their offices.

"The office of operation will be charged with responsibility for the protection of national forests, for the building of roads, trails and other permanent improvements upon them, for the organization of the force on national forests and with the supervision of all business relating to the special use of national forest resources. The office of silviculture will have supervision of the free use and sale of timber from national forests, forest planting upon them, and will conduct forest studies on national forests, as well as in cooperation with private owners in the district. The office of grazing will supervise grazing business in the district, except for the actual fixing of allowances, periods and rates, and will make studies looking to the improvement of the forage crop on national forests. The office of products will make both independently and in cooperation with private owners studies leading to a more profitable use of timber on and off national forests within the district and to their preservative treatment.

"From the district foresters down the personnel of the District offices is made up of men picked for their proved capacity, for their thorough training and for their experience in the West. Most of them are men who not only have worked in the West after they entered in the service, but who lived in the West before they took up the government forest work. Many of them are men who formerly were employed on the national forests and have been promoted to larger responsibilities as a result of their high efficiency. The personnel of the district offices, which has just been announced, is as follows:

"First District

"Montana, northeastern Washington, northern Idaho, northern Wyoming and northwestern South Dakota. Headquarters: Missoula, Mont.

"W. B. Greeley, district forester; F. A. Silcox, assistant district forester.

"R. H. Rutledge, chief, office of operation; R. Y. Stuart, assistant chief; J. P. Martin, chief engineer; E. W. Kramer and T. L. Day, engineers; E. B. Quiggle, chief, section of occupancy; P. J. O'Brien, claims clerk; J. E. Keach, settlement clerk; C. O. Wilhite, uses clerk; H. I. Loving, fiscal agent; O. M. Wold, J. A. Urbanowicz, Miss Grace M. Curtin and P. S. Gray, accounts clerks; R. L. Campbell, chief, section of maintenance; Miss Belle G. Warren, Miss Lydia Jacobi and Miss J. L. Farnsworth, clerks; Gordon Guptill, H. F. Tripp and Mrs. L. H. Bryan, draftsmen.

"C. H. Adams, chief, office of grazing; W. S. Perrine, assistant chief, and Miss B. Todd, clerk.

"W. R. Wheaton, chief, office of products; F. I. Rockwell, Assistant chief, and Miss Eva Slocum, computing clerk.

"A. W. Cooper, chief, office of silviculture; D. T. Mason, assistant chief; E. I. Terry, chief section of silvics; W. T. Stone, assistant; E. C. Clifford, chief section of planting; W. M. Aiken, law officer; S. J. Humeston, assistant law officer; J. F. Preston, J. D. Warner, J. A. Fitzwater, G. B. MacDonald, K. W. Woodward, W. B. Piper, L. S. Murphy, J. St. J. Benedict, E. D. Fletcher and P. R. Hicks, forest assistants; F. X. Salzman, A. J. Norton and W. T. Cott, lumbermen; C. W. Gleason, R. P. McLaughlin, J. W. Streit and J. D. Jones, land examiners; G. B. Swim, assistant land examiner; H. M. Booth, C. A. McElroy and C. J. Sullivan, expert miners.

"The following have been assigned to the stenographic work in this district: Misses F. L. Sinclair, E. M. Linell, Florence Kelly, Bessie C. Shimman, B. M. Gray, H. E. Kearney, Eva Ammen, Mathilde Ammen, Mrs. L. K. Locke, Floy K. Riley, Otto Greenwald and C. E. Gage.

"Second District

"Colorado, southern Wyoming, South Dakota, northwestern Minnesota, Nebraska, western Kansas and southeastern Utah. Headquarters; Denver, Colo.

"Smith Riley, district forester; P. G. Redington, assistant district forester.

"Fred W. Morrell, chief, office of operation; C. J. Stahl, assistant chief, R. E. Mesnard, chief engineer; Nile Hugel, engineer; Fred Loes, chief, section of occupancy; C. F. Follen, claims clerk; Miss Anna L. Riordan, settlement clerk; G. W. Holland, uses clerk; W. R. Fuchs, fiscal agent; F. C. Thompson, W. A. McKenzie, Miss Alva von der Linde and W. C. Stump, accounts clerks; J. W. Dilly chief, section of maintenance; Miss Gertrude L. Kimmel, file clerk; Mrs. Rosa C. Pennebaker, assistant file clerk; Miss Nettie M. Kimmel, mail clerk; C. B. Gosorn, Miss Clare B. Noyes, I. I. Tayloe and Mrs. Stella W. Munce, draftsmen.

"J. W. Nelson, chief of office of grazing; E. N. Kavanagh, assistant chief; Miss Anna P. Koschwitz, clerk.

"C. L. Hill, chief, office of products; G. R. Ogier, assistant chief; W. L. Stockton, computing clerk.

"A. K. Chittenden, chief, office of silviculture; S. L. Moore, assistant chief; C. G. Bates, chief, section of silvics; W. D. Edmonston, assistant; L. C. Miller, chief, section of planting; G. S. Arnold, law officer; J. M. Cates, assistant law officer; J. Bentley, Jr., R. W. Allen, G. P. Bard, R. G. Pierce, H. B. Holroyd, A. L. Helm, T. Lyons and J. A. Silsbee, forest assistants; W. R. Davey and H. S. Bushnell, land examiners; G. H. Gustafson, M Gregory, William Darley and F. W. Blatt, assistant land examiners; George P. Gregg, W. R McKinnon and J. S. Baird, lumbermen; T. A. Curry, and F. Sherwin, Jr., expert miners.

"The following have been assigned to the stenographic work in this district: Misses Ethel M. White, Hilda Rosenquist, Stella Hooper, P. Womack, Lura M. Holcombe, Carrie L Hendricks, Sue Hayward, May Wise, Ermina E. Weaver, Anna Mellan, Eva L. Gay, Lillian E. Wessler, Mabel Berry, Hattie Felder, Lena A. Daniel and Marguerite T. Waters.

(To be continued in next issue of Bulletin)

HUNGRY FOR WOOD

In explaining the origin of the name of one of Grays Harbor's principal cities, the report of an industrial survey says: "Hoquiam--an Indian name corrupted from Hoquimpts---meaning 'Hungry for Wood,' was the site of an Indian Village in 1792, when Captain Robert Gray sailed into the harbor which now bears his name."

At the time the name was given, it must have been strikingly incongruous except possibly in an extremely localized sense. Northward to the Straits of Juan de Fuca extended one of the finest forests in the world. Even today, within relatively few miles of Hoquiam, one can see stumps eight and ten feet in diameter until the eye tires of them. Probably few cities in the world had within a fifty mile radius a larger volume of high timber than did Hoquiam.

But year after year that timber passed through the mills of Hoquiam, Aberdeen and the minor towns of the bay in volumes that staggered the imagination. At the high tide of production a billion and a half feet of timber left Grays Harbor in a single year. The forest was pushed farther and farther back, with little but stumps to show that it had existed.

Meanwhile a thriving city had sprung into being, with numerous sawmills and other wood-using industries and other multiplied activities. Hotels, business structures, and public buildings of a high type were erected. A community reflecting the best in modern standards was the result.

Now, the timber that built the city is largely gone and has not been replaced. Agriculture will use only a fraction of the soil from which the timber has been removed. Perhaps the Indian who first named the site had a gift of prophesy. Hoquiam doubtless will persist, but if it retains its proportions of a decade or two ago it will be a city "hungry for wood." - L. F. Kneipp.

EROSION ON THE NAVAJO

By Lyle F. Watts and Leon C. Hurtt, Northern Rocky Mt. For. Expt. Sta.

The appalling consequences of mismanaging and abusing grazing lands are most vividly portrayed in the November 25 issue of the Saturday Evening Post. Mr. Walter V. Woehlke is the author of this article entitled, "The Battle for Grass." One of its great virtues is that the erosion menace is stripped of all confusing technical verbiage and presented in such a clear-cut dramatic manner. The layman can clearly discern from it that he has a stake in grazing land management even though he may never expect to own livestock. This article may well mark a definite change in public apathy of the past toward erosion and over-grazing.

The policy of controlled land use with the very much better conditions prevailing under National Forest type of administration is thrown into strong relief when contrasted to the uncontrolled use that has caused such deplorable erosion on the Navajo Indian Reservation of New Mexico. This pointing with pride to Forest Service success is all very gratifying. The important question for us is whether the kudos are still deserved. If, as we suspect, the intensive campaign of the past two years to arouse public opinion on the erosion question does cause John Citizen to look more critically at Forest Service administration, is it possible that he may find some places where heaving a few bricks may be warranted? We feel sure he can.

Our near-fetishism for economy and efficiency in organization during the past ten years has carried us off the course charted by Pinchot, Potter, and Jim Jardine. Our fundamental job of resource management has suffered.

The present trends toward national land use planning will make the public far more discerning and critical of bad public land management than it has been in the past. Mr. Woehlke's story ought to be a warning to us that false economy will not be tolerated in the Forest Service at the expense of good resource management. It will be a lot more agreeable to continue as a shining example than to become a target for well informed public sentiment.

THE HUMAN SIDE OF CIVILIAN CONSERVATION CAMPS

(From an article by Alfred E. Rupp, Pennsylvania State Supervisor of E.C.W., in the Pennsylvania Department of Forests and Waters Service Letter)

The emergency conservation workers were enrolled as a means of giving wide-spread work relief. It is the largest peace-time army ever mustered together, and it is the first of its kind in the history of the world. Its contribution to the moral, spiritual, and physical life of the nation cannot be estimated.

One may picture a youth of 18 to 20 years of age, without a job, and looked to for assistance in supporting his family. Beaten before he has a chance to start in life, he is sleeping in flop houses, eating in bread lines, begging a dime on the street when hunger destroys the last vestige of his pride. He is ready to follow the lead of the first spell-binding agitator, not because he wants to, but because he can see no other way out.

There are others who come from good homes, who in past years have been in school, or held good positions. They could not secure work and their families needed funds. Rather than loaf they enrolled in the camps. They are not only getting personal benefits, but are helping their dependents at home, and their less fortunate comrades in the camp. They work hard, they eat well, but best of all they again lead ordered lives and earn something for their families.

The forestry army is an actual, substantial, and purposeful thing. Not a group of men begrudgingly going through the motions of work in order to receive a dole, but a happy, proud, and eager body of young men giving an honest bit of work in return for honest wages paid in money and in kind.

Greatly improved in physical condition by regular habits, hard work and good food; with new ideas and wholesome ideals breathed in from the great outdoors, some twenty thousand men will eventually return to the places whence they were enlisted. When they return to their homes and new jobs the training they have received and the lessons they have learned will undoubtedly be a contribution to their citizenship. This, after all, is the test as to whether the Civilian Conservation Camps have made a contribution to the welfare of the citizens of Pennsylvania and to the conservation of the natural resources in the State.

THERE ARE ALWAYS TWO SIDES

(Written by E. H. MacDaniels nine years ago and referred to in his letter to the Editor published in the January 1, 1934, issue of the Service Bulletin)

Cooperation for the fire season has been officially opened by a wrathful fire warden with a clipping from the local paper. The offending article stated that the lookouts on the Robinson N.F. had gone to their stations; that they reported everything clear on the Robinson; but that there was a big fire on the head of John Doe Creek, in association territory!

There were two slips in this article. The fire that was raging so fiercely was merely neighbor Jones burning slash as per State law, and it was on Richard Roe Creek, nine miles northeast of John Doe Creek. The warden's indignation at being credited with an uncontrolled fire that he did not have was only partly balanced by his glee at catching the government man in a discrepancy of this size. He was firmly convinced that the article was given out with the purpose of putting him in a hole; and also that this sample of the lookout's accuracy was about what could be expected.

All this is very old stuff. It can be heard at any time, at any ranger station or warden's camp, and it is just about as correct in one case as in the other. We admit freely that we are mighty clever at fighting fire, and many of the State and association men are good enough sports to admit it also; but they think, with some reason, that when we refuse to credit them with good intentions and some knowledge of what to do with a fire, we are not in touch with all the facts.

Just take an unprejudiced look at the layout. The States and associations in D-6 take care of a larger area and much more property than the Forest Service and with fewer regular men. Their hazard is 2 or 3 to one as compared with ours. While we get more lightning and campers, they have most of the railroads, hay diggers, squirrel ranchers, highways, a very fair share of the incendiaries, and more than 90 percent of the logging industry. Supposing you had a ranger district with 48 haywire, hand-crank sawmills in it, and had to see that they were all equipped with the right sort of tools in a box, burner, pump, hose, and spark arrester; or supposing you had to issue two or three hundred burning permits, and then herd the permittees around and see that they do not burn up themselves and their neighbors. Anybody want the job? No? Then don't try to get onto the State force. Anybody who trains with that bunch is going to get experience, and get it fast.

It is true that the State and private patrols are not 100 percent good. It is also true that some forests are, as you might say, better than others in handling fires and that sort of thing. When you mention a slip that a State man has made, the number of similar slips made by the Forest Service that a well-informed State man can tell you about is truly surprising. He can also give names, dates, section, township and range, and he is often disconcertingly correct.

One of our best diversions is gloating over the other chap's troubles. It's a harmless sort of amusement, but, of course, it must work both ways. In this busy fire season that is coming, it will be just as well to remember, when we see a warden with more grief on his hands than he can handle, that at some hair-hung crisis, some ranger district is going to blow up with a loud ,agricultural report. If some harassed State man takes our well-meant suggestions in an unpolished manner, recall the fact that beyond question tomorrow afternoon some Government man will give a State man the retort discourteous, if not the counter check quarrelsome. When you see a State fire hop over 19 fire lines and cover half a township, reflect that something of the sort has been known to happen on National Forests, and that we were right there with the very same alibi that the warden will turn in to his boss.

When you see the green nephew of the association's president in a responsible job think of that highly recommended dispatcher who proved to be so doggone useless. Dig into the personnel files and drag out that case of the trusted fireman who went berry-picking instead of putting out the Squeedunk fire. It will make you feel better when you hear that some State lookout has been noted 3 miles off his station with a gun.

Next fall when the returns are all in, if they are true to form, they will show that the States and associations have made more arrests, collected more fines, put out more fires and spent more money than the Forest Service. Very likely, when everything is taken into consideration it will be found that they have not lost such a whale of a lot more property than we have. Nothing much will be said about it, but when the Board of Review has completed its dark task it will be evident that not all the boners, bulls, and blunders were on any one side.

MORAL - OH, ROLL YOUR OWN!

YE EDITOR DISCOVERS

The major forestry projects completed by the men of the Civilian Conservation Corps and the Indian conservation camps during the first six months enrollment period ending September 30, 1933, were outlined in a report recently submitted by Director Fechner to President Roosevelt. The report, compiled from official work records prepared at the various camps, shows that 12,671 miles of trails were built, that the men constructed 68,000 soil erosion dams, spent 400,000 days fighting forest fires, built 4,229 bridges, planted trees on more than 25,000 acres and began planting operations on an additional 50,000 acres. Disease control work was completed on 1,675,000 acres, rodent control work on 3,566,918 acres and insect pest control work on 800,153 acres and poisonous plant control work on 47,459 acres.

The great bulk of the work done was accomplished during the months of July, August, and September as the strength of the forestry army did not reach its peak of around 300,000 until the middle of July. The work was done under the supervision of the forestry experts of the Department of the Interior, the Department of Agriculture and the forty seven States where the men were located. Twenty-eight camps containing 5,600 veterans did flood control work under the supervision of the Chief of Engineers of the War Department. Of the 1,539 camps in the continental United States, 1,261 were under the supervision of the Forest Service, 172 under the Office of National Parks, Buildings and Reservations, 71 under the Bureau of Indian Affairs, 28 under the Chief of Engineers, 3 under the Bureau of Biological Survey, 3 on Army Reservations, and 1 under the General Land Office.

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Arrangements have been made for a meeting of the National Forest Reservation Commission at 10 a. m. on Thursday, January 11. Present indications are that a purchase program of between one-half and three-quarters of a million acres will be ready for presentation to the Commission on that date. If opportunity affords, there will also be presented to the Commission the results of a study made by Howard Hopkins, of the Branch of Lands, during the past two or three months. This study shows the areas in the continental United States which are not only of major watershed influence but within which soil erosion is assuming serious proportions; the areas of major watershed influence in which erosion is less serious; the areas within which soil erosion is of serious extent but where watershed control is not quite so important; the areas which are from 75 to 100 percent submarginal for agricultural production; and the areas in which the proportion of submarginality is from 50 percent to 75 percent.

All available data tending to indicate the extent of these various classifications have been brought together in both tabulated and map form. Each class of land contains, of course, a considerable proportion of lands in conditions other than those indicated by the broad classifications; the exact areas not being determinable on the basis of present information. But on the basis of the broard and apparently dominant classifications the data indicate that the total area combining both major watershed influence and most serious soil erosion is almost 163 million acres; the additional area of major watershed influence but lesser soil erosion is 276 million acres; the additional area of most serious soil erosion but of less than major watershed influence is 119 million acres; the additional area where the land is more than 75 percent submarginal is 257 million acres; and the still further area of 50 to 75 percent submarginality is 77 million acres. These figures relate only to the lands within the natural zone of tree growth and do not include the naturally treeless areas of the Central States.

Viewing the matter from the standpoint of future national security rather than from the professional viewpoint of desiring the best practicable conditions under which to practice forestry, the circumstances would indicate that the greatest need for Federal action occurs within the areas which combine both major watershed influence and most serious soil erosion; next within the areas of major watershed influence but of lesser soil erosion; next within the areas where soil erosion is serious though watershed influence is less than major; next within the areas where the land is more than 75 percent submarginal; and last where the proportion of submarginality is from 50 percent to 75 percent.

Although admittedly imperfect, the data compiled paint a broadly dependable picture of that part of the land use problem of the United States for which forestry seems to be the most practicable and logical remedy. It therefore is hoped that there will be opportunity to present the data in detail to the Commission and to secure from the members of the Commission an expression of views as to the fundamental policies by which the future forest land purchase work of the Federal Government should be guided and controlled.

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Out of a total of 31,551 men allotted to the Forest Service under Civil Works Administration projects, 89 percent, or 27,964 men, were at work on December 30. The revised allotment by Regions and number of men at work are as follows:

Region	Total men allotted	Men at work December 30	Percent of Allotment
3	1,165	984	84
5	7,500	7,102	95
6	45	45	100
7	7,402	5,733	77
9	13,460	12,743	95
Research	1,898	1,291	68
D. C.	81	66	82
Total	31,551	27,964	89

HUGH RANKIN HONORED

By E. N. Kavanagh, R. 6

It was my good fortune on November 15 to be in Medford and to represent the Regional office at the luncheon complimenting retiring Forest Supervisor Hugh Rankin and his successor, Karl Janouch.

Citizens of Medford and vicinity, business men and women, Army officers, representatives of the Park Service and the Forest Service, including among the latter Supervisors from the three neighboring Forests to the Rogue River, filled the large dining room at the Hotel Medford until there was no room left. This tribute speaks highly of the character of the men for whom the luncheon was given.

The many years that Hugh Rankin has represented the Forest Service in southern Oregon have been years of constructive effort on his part and of work so well and so loyally done as to command the respect of all with whom he came in contact. We know that at times he differed in his judgment with some of the influential people in Medford and vicinity, but as the years rolled by, his judgment in most instances has been vindicated and these people came to this Chamber of Commerce luncheon to tell him how they respect him for what he is and has accomplished.

The tributes paid to Hugh and the work he has performed as Supervisor of the Crater Forest, and more recently of the Rogue River Forest, could not help but make one feel proud of the man himself and also of the Service which he has represented so well. His own response to what was said regarding him was typical of the man, as he tended to belittle his part in the accomplishments of the past.

The good wishes and offers of cooperation extended to his successor Earl Janouch indicate clearly that the people in the Rogue River section are thoroughly sold to forest administration; they believe that forest conservation means much to them individually and collectively. Their promise to cooperate to the fullest extent possible with Janouch in his administration of the Rogue River Forest is indicative that the progress which has been made under Supervisor Rankin will be continued under his successor.

Hugh has a ranch not far from Medford to which he intends to give his attention from now on. When he gets it fixed up, he will be looking for some of his old tillicums in the Service to call and see him, and it will be worth their while.

COMPARISON OF NIRA ALLOTMENTS, MEN REPORTED AT WORK JANUARY 1 AND TOTAL MAN WEEKS OF EMPLOYMENT REPORTED TO JANUARY 1.

Region	Men reported Jan. 1	Total Man Weeks of Work reported to Jan. 1. Number	Percent	Revised Net Allotment Percent
1	189	15,948	8.0	15.
2	1,257	21,807	11.0	4.4
3	1,275	26,608	13.4	8.7
4	246	22,625	11.4	7.3
5	1,755	15,322	7.7	20.9
6	1,065	30,936	15.6	11.9
7	2,282	19,338	9.7	13.2
8	41	300	.2	.3
9	3,120	39,223	19.8	9.9
Research	286	5,393	2.7	7.0
Biol. Survey	162	1,001	.5	1.1
Total	11,678	198,501	100.0	100.0

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES. WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XVIII No. 3 Washington, D. C. January 29, 1934.

COMMONWEALTH OF PENNSYLVANIA

GOVERNOR'S OFFICE

Harrisburg

November 15, 1933.

Bob Stuart was a Forester of great attainments and real distinction. He was a kindly and considerate gentleman - a man of good will in the finest sense. We served together in the United States Forest Service.

In the old days, when the fight to conserve and protect the National Forests against lumbermen, sheepmen, and other exploiters of that time was still in full swing, Bob Stuart was a tower of strength.

It was because of what I knew about his work in the West that I asked him to help me when I became Pennsylvania Commissioner of Forestry. I have always congratulated myself that I was fortunate enough to get him as Deputy Commissioner. His work in that post made it inevitable that he should be promoted to be Secretary of Forests and Waters in my Cabinet when I became Governor. And I am sure it was the high character of his work in Pennsylvania which brought him his well deserved step to the highest place a forester may reach, Chief of the Forest Service and Forester of the United States.

His death is a great loss to the profession of forestry and to the Forest Service. It is also a very grievous blow to his multitude of friends. Bob Stuart not only rendered services of high importance to his country and his profession, but his death left a great gap in the hearts of those who knew him.

He was my friend for nearly thirty years, and his departure is a deep and lasting sorrow.

GIFFORD PINCHOT

MORE ABOUT AX HANDLES

By Harry D. Tiemann, Forest Products Laboratory

In the Service Bulletin of December 4 Mr. Funke explains an ingenious method of keeping ax handles tight by means of a rivet across the eye of the head. "The proof of the pudding" being in the eating, criticism of the theory suggested as to the whys and wherefores might now seem to be like the dog's tail, a little behind if indeed not altogether inapropos. Nevertheless, there are always those who like to dig in the puddle and muddy up the water. For the edification of such, I would beg leave to differ from the theory there suggested and offer an explanation based on what has gradually been found out by experiments.

The action described in the article is not quite so simple as indicated. Wood is a peculiar substance in that when wet and subjected to stress it receives what we, for want of a better name, call "set." That is, it takes on a new permanent dimension. If a dry piece of wood becomes wet and is prevented from swelling by a restriction such as an iron clamp or ring, it becomes strongly compressed due to its own tendency to swell, and receives a "compression set." When it dries again it shrinks to a smaller size than it had before. This same process can be repeated again and again until the wood becomes much smaller in size. It is this action, which I have termed "compression shrinkage" which is responsible for the loosening of ax handles. Incidentally the expanding of the eye of the blade, by the compression when the wood swells may add to the trouble. It is exactly the same action which causes wooden pails to so aggravatingly fall to pieces, no matter how tightly the staves have been wedged when dry. It even causes beer barrels to get smaller and smaller each time the hoops are tightened. In fact this compression shrinkage is so universal that there is hardly any use of wood which escapes its action: flooring shrinks; ladder rounds loosen; furniture falls apart; tanks leak; boards warp and weather; and shingles curl up. Unfortunately, there is no cure to this inherent property of wood; it may be avoided, however, by maintaining the wood in a wet condition, by soaking in glycerine, or by preventing alternate wetting and drying of the wood. Every time a handle is tightly wedged when it is dry, then soaked, it will loosen again when it redries. There seems to be no method of impregnation which will keep out the moisture and prevent swelling. It will retard the action but eventually the wood substance will swell the same amount.

The subject is rather too intricate to cover in a note of this kind, but one of Mr. Funke's statements needs modifying. While it is true that there is a limit to the amount of water which a certain block of wood can absorb, this limit is not brought about by pressure. It absorbs water in two entirely different ways. When the dry cell walls take on moisture they swell and the amount they can take on is limited by the nature of the wood substance itself. This amount is called the fiber-saturation point; it is about 25 to 30 percent of the dry weight of the wood. There still remain the pores of the wood which can be filled with water, which in no wise influence the swelling. Of course when the pores are all filled the block can take on no more water, it is chock full. Now, this "free water" can be squeezed out by mechanical pressure, sufficient to compress the block, but to squeeze out any of the hygroscopic moisture would take a greater squeeze than we have ordinary means of producing. Or to look at it in another way, no ordinary amount of mechanical pressure can prevent the cell walls from taking on moisture, and swelling. The reason the wood does not burst the collar is that it has pores or interstices and when the block as a whole is prevented from swelling, the walls are merely distorted and swelling takes place internally. If the block were solid wood substance, it would exert an enormous pressure, sufficient to burst the ax blade when it absorbed moisture from a dry condition. Such pressures are difficult to measure experimentally, and so far as I know no figures have ever been obtained for the swelling pressure of wood substance. Theoretically, for fairly dry wood substance the pressure may run up to over 5,000 atmospheres (73,500 lbs. per sq. in.) and when very dry it may run to 11,000 atmospheres (161,700 lbs. per square inch). So it will be seen that so far as the absorption of moisture and the swelling of the cell wall is concerned any amount of pressure we can ordinarily apply will have little effect.

It appears, therefore, that the statement to the effect that if we could confine the wood against expansion radially the cyclic effect of expanding and shrinking with changes in the humidity of the air would be eliminated is wholly incorrect. Any doubts on this point can readily be removed if the investigator will drill a one inch hole in an iron nut and wedge in it a dry piece of wood, then soak this for several days and redry it. The stick will come loose no matter how tightly it was wedged to start with.

This is no highbrow criticism of the ingenious method devised by Mr. Funke and cannot detract from his laurels. If he has found a means of retaining the hold of ax handles in outdoor service he has accomplished something of great and lasting credit, whatever be the explanation.

ONE FLOOD REGION REPORTS

(From a letter by Regional Forester Kelley)

The last week or ten days of 1933 brought to western Montana and northern Idaho (north of Locksa River) one of the worst, if not the worst, flood conditions ever to befall the region. The town of Wallace is wrecked at its lower limits by the water of Placer Creek - miles of highways are destroyed in the general vicinity of Wallace and Kellogg. The dykes at St. Maries broke and the St. Joe rose to a height never before known and swept the farmstead improvements away from more than 100 families. Two CCC camps were flooded out on the St. Joe and I dare say that all of our bridges on the larger of the secondary streams are gone; 32 on the Trout Creek District also were carried away. The Selway and Locksa did not rise abnormally; nevertheless, the Clearwater at Lewiston broke a flood height record. You can draw on your imagination to portray the damage done along the North Fork which feeds into the main stream at Ahsahka.

Roads are washed out, bridges gone, buildings swept away and much damage done by windfall. About a township of timber blew down on the Kaniksu starting at Falls Ranger Station and extending northerly to about Gleason Ranger Station. This includes a lot of heavy white pine.

St. Regis, Saltese, and other settlements along the St. Regis River are largely wrecked. The highway along that stream is destroyed for miles. The Milwaukee there and down the St. Joe has been out for 10 days or more and will be for another like period. Tracks have been swept away by landslides. Bridges have been washed out and in general the track is wrecked. The N. P. branch at Wallace is in a similar condition.

In general the flood district corresponds to the St. Joe, Coeur d' Alene and Cabinet 1910 burned area. At any rate it is a knockout. We have men out now appraising the damage to improvements and forests.

GOING TO SCHOOL

(Excerpts from article in "Happy Days")

Throughout the country, in practically every CCC camp, the men are now "going to school" in earnest. ***

Recreation halls are being turned into school rooms and lecture halls--from three to five nights each week. Nearby town schools are being operated in the evenings for the benefit of the CCC. Instruction even is being brought to the forest camp from miles away in the form of extension and correspondence school courses.

There is hardly a subject of study found on the best of university curriculums that isn't being studied in at least one of the camps of the woods workers. The sciences, language, literature, engineering, agriculture, forestry, business--all are represented in the lists of subjects being taught the men in the evenings after their day's work is finished.

Some of the men are only just beginning to learn the intricacies of writing their names and memorizing the letters of the alphabet. Others are delving into the secrets of electrical engineering and higher mathematics. Still others are learning the ins and outs of bookkeeping, typing, and factory management.

Thousands of the men are deep in contemplation over the whys and wherefores of the growth and care of trees; in the productive and economic use of lands; in the care and operation of gas engines, road machinery and surveying instruments. Even music, photography, and painting are included.

Some of the camps are more highly organized than others. In most instances, however, the organization has been done by district or by Army corps area. Available welfare funds have been utilized for the purchase of books and other equipment to further the endeavors of the men. Other funds for books will be made available.

Transportation is being furnished the men from camp to night school in some places where that sort of arrangement is deemed most practical. In some cases men are being hauled twenty, thirty, and forty miles to school two and three evenings a week.

At some camps arrangements have been made with teachers from schools and colleges in the vicinity of the camps to come into the camps to help the men with their studies. At some camps the men themselves are assisting the company officers and forestry supervisors in the conduct of the work. But, for the most part, the work of instruction and educational leadership and guidance is being carried on by the Army officers and the Forest Service and Park Service officials of the camps.

In the near future an educational advisor will be named for each of the camps--an experienced teacher whose job it will be to assist the company commander in working out the program of education.

FIVE AND TWENTY YEARS AGO

(Cont'd. from January 15 issue of Bulletin)

"Third District

"Arizona, Arkansas, New Mexico and Oklahoma. Headquarters: Albuquerque, New Mexico.

"A. C. Ringland, district forester; E. H. Clapp, assistant district forester.

"A. C. Waha, chief, office of operation; R. G. Wilson, assistant chief; E. H. Jones, chief engineer; H. H. Harris, chief, section of occupancy; Oliver C. Phillips, claims clerk; Miss K. M. Riley and G. Griffin, settlement clerks; W. D. Wheeler, uses clerk; J. J. Duffy, fiscal agent; William Rose, A. Morris, Miss M. L. Hobgood and Mrs. E. V. Steely, accounts clerks; W. B. Bunton, chief, section of maintenance; Miss Mary Latimer, file clerk; Miss Cornelia Glaze, assistant file clerk; Mrs. Ruth Harris, mail clerk; E. R. Thompson, Charles H. Freyer and Miss Helen B. Smith, draftsmen.

"J. K. Campbell, chief, office of grazing; John Kerr, assistant chief, and Miss Zuleika Felder, clerk.

"O. T. Swan, chief of office of products; Miss M. A. Bell, computing clerk.

Swift Berry, Louis Margolin, Carl A. Kupfer, V. Wulff, G. R. Gessert and W. D. Dudding, forest assistants; S. M. Cross, John L. Lafon, Jr., and J. C. Elliott, lumbermen; G. L. Duncan and E. C. Hard, expert miners.

"The following have been assigned to the stenographic work in this district: H. G. Allen, Mrs. Ruth Lyle and Misses Mary O'Toole, Marjorie Webster, Cora Slicer, Claudine McClinton, F. Keen, M. E. Sherman, Marie Smith, Violet Kidwell, L. M. Jarvis, Annie K. Gardner, Minnie B. Aarons, Bertha M. Brown and Ella M. Hildreth.

"Sixth District

"Washington, Oregon, a small portion of northern California, and Alaska. Headquarters: Portland, Oregon.

"E. T. Allen, district forester; G. E. Cecil, assistant district forester.

"C. H. Flory, chief, office of operation: C. J. Buck, assistant chief; W. E. Herring, chief engineer; W. H. Benton and E. H. Darling, engineers; W. F. Staley, chief, section of occupancy; D. F. McGowan, claims clerks; T. M. Moorman, settlement clerk; Frank A. Law, Jr., uses clerk; A. H. Cousins, fiscal agent; Miss Florence D. Strause, C. C. Brunner, Miss Lucy I. Brader and Miss Augusta W. Russell, accounts clerks;, Shirley Buck, chief. section of maintenance; Miss E. J. Bernhardt, file clerk; Mrs. A. P. Mulford, assistant file clerk, Mrs. L. G. Riddell, mail clerk; O. E. Haring, R. H. Robertson, G. Hilton and Miss L. W. Cottrell, draftsmen; Howard K. O'Brien, chief, office of grazing; T. P. McKenzie, assistant chief; Mrs. M. L. Joynt, clerk.

"J. B. Knapp, chief, office of products; H. B. Oakleaf, assistant chief; Miss Erma F. Bell, computing clerk.

"F. E. Ames, chief, office of silviculture; C. S. Judd, assistant chief; T. T. Munger, chief, section of silvics; J. F. Kummel, chief, section of planting; C. R. Pierce, law officer; G. E. Trowbridge, assistant law officer; N. F. McDuff, Dorr Skeels, Max Rothkugel, P. S. Buhl, O. P. M. Goss and E. B. Starr, forest assistants; William T. Andrews and J. P. Hughes, lumbermen; C. L. Farrar and A. L. Thayer, land examiners; W. McBride and T. O. Erickson, assistant land examiners; J. G. Giddings and H. S. Riggins, expert miners.

"The following have been assigned to the stenographic work in this district: Misses Pearl Shrader, Anna Madson, Dora Reese, Agnes McNair, Elizabeth Garth, Buelah Westlake, Louise Helmick, K. L. Reed, Clara Gonter, Agnes B. Scannell, Ida Estes, Mrs. M. F. Rule, Florence Wilson and Mrs. J. R. Anderson."

CCC SAYS:

"According to instructions of November 23 must construe that nothing less than one mile of road is to be reported, which does not give true picture as we have 1,000 ft. road completed, 2,200 ft. partly completed, and am proud of boys as all this has from 8 to 34 ft. cuts; but as I read instructions, must report we haven't even started, because column 8 must total 5, 6, and 7 to make same as column 4."

Heaven will reward the above 13-day good record of a new camp just starting, if Form 7 won't. That recognition being a little slow, however, we are making Form 7 do part of its duty now by converting the work done to tenth-decimal miles and by putting column 8 in its proper place. You have to watch column 8. It has a sneaking tendency any way to want to hog the whole show.

Will figures lie or misrepresent? Someone thought our old code numbers 53 and 55 looked so much alike that he used 53. Arithmetic says the difference is 2. But in the above case we were left with a sack of 361,000 public camp ground facilities in a State where it is too hot for summer recreation. The item having hurdled all the obstacles enroute between the camp and Washington, got through to the Census Bureau before it was caught -- almost -

J. H. Hatton

"T. S. Woolsey, chief, office of silviculture; A. B. Rechnagel, assistant chief; W. R. Mattoon, chief, section of silvics; G. A. Pearson, assistant; A. S. Peck, chief, section of planting; H. B. Jamison, law officer; I. F. Eldridge, J. H. Allison, R. L. Rogers, S. G. Smith and D. N. Rodgers, forest assistants;D. W. Adams and A. L. Wynne, lumbermen; J. V. Hubbard and Lee A. Harris, land examiners; E. H. Corlett, Jr., H. Greene, G. H. Kellogg and Morton K. McGillan, assistant land examiners; S. L. Gillan and H. N. Johnson, expert miners.

"The following have been assigned to the stenographic work in this district: Claudius J. Neis, Luther Steward, James T. Markey, Mrs. B. S. Asquith. Misses Florence Derbyshire, Mary Miller, M. E. Baker, Lillie A. Cheshire, M. A. Shekells.

"Fourth District

"Utah, southern Idaho, western Wyoming, eastern Nevada and northwestern Arizona, Headquarters: Ogden, Utah.

"Clyde Leavitt, district forester, Franklin W. Reed, assistant district forester.

"R. P. Imes, chief, office of operation; E. H. Clarke, assistant chief; A. T. Mitchelson, chief engineer; A. L. Herring, engineer; Timothy C. Hoyt, chief, section of occupancy; Miss N. Huff, claims clerk; Miss M. M. Childs, settlement clerk; C. S. Brothers, uses clerk; Q. R. Craft, fiscal agent; M. J. O'Toole, J. W. Cook, H. A. Seip, and Mrs. S. G. Totten, accounts clerks; R. E. Connor, chief, section of maintenance; Miss Lillian McDevitt, file clerk; Mrs. C. J. Kemon, assistant file clerk; Miss H. R. Patterson, mail clerk; A. G. Sorensen, Miss H. J. Holberg and Miss A. R. Holberg, draftsmen.

"Homer E. Fenn, chief of office of grazing; A. C. McCain, assistant chief; Mrs. J. B. Burnham and Mrs. M. L. Ring, clerks.

"A. L. Brower, chief, office of products; W. H. Murdock, computing clerk.

"L. L. White, chief, office of silviculture; O. M. Butler, assistant chief; E. R. Hodson, chief, section of silvics; F. T. McLean, assistant; J. M. Fetherolf, chief, section of planting; W. C. Henderson, law officer, C. E. Dunstan, D. C. A. Galarneau, C. P. Wilbur and L. Crowell, forest assistants; D. W. Seery and D. M. Lang, lumbermen; W. W. Blakeslee and G. C. Thompson, land examiners; R. Dieffenbach and William Winter, assistant land examiners; B. L. Wheeler, expert miner.

"The following have been assigned to the stenographic work in this district: V. C. Metcalf and Misses Anna M. Dow, Judith Fant, H. V. Hittue, Pattie Sanderlin, Ruth Helff, Grace Griswold, Mary E. Moore, Rozelle Lazenby and Veronica Tegethoff.

"Fifth District

"California and southwestern Nevada; headquarters: San Fransicso, Cal.

"F. E. Olmsted, district forester, Coert Dubois, assistant forester.

"R. L. Fromme, chief, office of operation; Roy Headley, assistant chief; F. C. Wales, chief engineer; W. C. Nespital and E. E. Leslie, engineers; B. Franklin, chief, section of occupancy; W. F. Gardner, claims clerk; Miss E. L. McFate, settlement clerk; B. P. Berger, uses clerk; J. S. Swan, fiscal agent; Miss Celestine Igoe, Miss E. M. Rea, H. J. Weil and C. Wiley, accounts clerks; A. L. Dahl, chief, section of maintenance; Mrs. V. M. Bain, file clerk; Miss Mary McDonald, assistant file clerk; Miss Martha Sexton, mail clerk; R. E. L. Borgfeldt, J. G. Shumate, Miss E.L. DeValin and Miss Daisy E. Walker, draftsmen.

"J. H. Hatton, chief, office of grazing; M. B. Elliott, assistant chief; Miss Lula E. Haukness, clerk.

"L. E. Hunt, chief, office of products; C. S. Smith, assistant chief; Miss Carrie T. Montrose, computing clerk.

"G. M. Homans, chief, office of silviculture; T. D. Woodbury, assistant chief; F. R. Cooper, chief, section of silvics; J. H. Foster, assistant; G. W. Peavy, chief, section of planting; E. A. Lane, law officer; T. M. Talbot, assistant law officer; P. T. Harris,

YE EDITOR DISCOVERS

Within the next week all the Regional Foresters will have arrived in Washington. ECW problems and plans for the summer program, hearings on the lumber code, hearings before the Senate Committee on Wild Life, and many other matters will receive the attention of the Regional Foresters while they are in Washington.

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In the February issue of Outdoor Life appears an editorial "Behold the Innocent Blatter." On the opposite page is a cartoon entitled "Shake Off the Incubus." This cartoon depicts the Forest Service carrying a large, fat, politically powerful sheepman with sheep scattered over the mountain side and a hunter protesting that the sheep are "ruining all my game." This editorial is evidently a follow-up of other articles which Outdoor Life has previously published. The Editor of Outdoor Life comments further that Mr. Carhart has been employed to write a series of articles on the question.

Through the publicity given this subject by Outdoor Life and the interest of the Izaak Walton League, the Senate Special Committee on Conservation of Natural Resources has arranged for a hearing on January 27, which Mr. Rachford of the Washington Office will attend. It has also been arranged for each Regional Forester to present a statement on the question at issue as it pertains to each Region. The time for oral presentation is very limited, but the Committee is agreeable to the presentation of any written statements the Forest Service may desire to submit.

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Although several types of radio equipment are now available, the rate at which they are being introduced into actual protection and administrative work does not seem altogether satisfactory. Consequently, Regional Foresters have been asked what is wrong, and while they are in Washington this subject will be discussed and steps necessary to the successful introduction of radio equipment into use by men heretofore unfamiliar with it will be reviewed. If the barrier to sufficiently rapid introduction is the inability of our organization in Region 6 to do the necessary introductory work, that difficulty may be overcome by some form of group training of men sent from each Region. Such men can then act as experts and trainers, as radio is introduced in new areas.

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Up to November 30, 1933, the following work was accomplished by the 325 CCC men employed in Region 8:

Roadside clearing along Forest Highways	7.5	miles
Forest stand improvement	2	acres
Truck trails	1.7	miles
Minor roads	2.7	miles
Horse trails	25.5	miles
Foot trails	121.8	miles
Dwellings erected	1	
Office buildings erected	1	
Public campground clearings	6	acres
Public campground buildings	10	
Public campground water systems	2	
Other administrative structures(includes docks and floats)	16	
Water system pipe lines laid	5,550	feet
Forest experimental plots examined	2	
Timber stand estimated	60,000	acres
Horse bridges constructed	1	
River channel excavation	50	cu. yds.
Landscaping	6	acres

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Friday is conservation day on the National Farm and Home Hour - not Thursday, as was stated in the Bulletin of January 1. The conservation series opened on January 12 with Secretary Wallace as the speaker. Assistant Secretary Tugwell spoke during the conservation program on January 19, and Chief Forester Silcox is scheduled to speak on the February 2 program. The NBC is presenting a series of dramatic skits during the hour; members of the cast of which are our old friends "Ranger Jim", "Jerry", "Bess", and "Mary". A part of the conservation period each Friday is being carried to the western Farm and Home Hour network.

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At its meeting on January 11, the National Forest Reservation Commission approved a purchase program totaling 776,378 acres. Grouped by forest regions, the purchases aggregate 12,988 acres in New England; 59,275 in the Appalachian; 247,399 in the Southern Pine; 99,569 in the Ozark and Central Mississippi River; and 256,114 in the Lake States region. The Commission also ratified a recess approval, as part of the three-quarter million acre total, for the purchase of about 100,000 acres, in the Hiawatha National Forest in Michigan and the Superior National Forest in Minnesota, and 1,264 acres for the McNeil Experimental Forest in Mississippi.

COMPARISON OF NIRA ALLOTMENTS, MEN REPORTED AT WORK JANUARY 15 AND TOTAL MAN WEEKS OF EMPLOYMENT REPORTED TO JANUARY 15.

Region	Men reported Jan. 15.	Total Man Weeks of Work reported to Jan. 15 Number	Percent	Revised Net Allotment Percent
1	141	16,260	7.4	15.0
2	782	23,589	10.7	4.4
3	1,310	29,146	13.2	8.7
4	161	22,960	10.4	7.3
5	1,839	18,931	8.6	21.0
6	855	32,817	14.8	12.0
7	2,312	24,016	10.9	13.3
8	22	359	.2	.3
9	3,057	45,410	20.5	9.9
* Research	357	6,075	2.7	7.0
Biol. Survey	128	1,292	.6	1.1
Total	10,964	220,855	100.0	100.0

* Does not include employments in Washington office.

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SERVICE BULLETIN

CONTENTS CONFIDENTIAL

WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
Theodore Roosevelt

Vol. XVIII No. 4 Washington, D. C. February 12, 1934

NOT YET VALUE CONSCIOUS

By H. R. Kylie, Washington

The other evening, at a Section Meeting of the Society of American Foresters the writer listened to an excellent talk by an excellent speaker. This speaker told us something of his estimates of forest land in the country based on a recent extensive survey; something of the abandoned and marginal lands; something of the acreage subject to washing. He spoke of the timber and water and recreation resources represented in present and potential Federal forest lands, and I think he even mentioned Grazing. He raised the question of ownership of such lands as should be included in a balanced national program of land utilization.

There was discussion, but although the speaker had listed water and recreation as resources, the discussion seemed to center around the timber resource on National Forests, not at all on the water or recreational resources.

A representative of the lumber interests thought that some lumbermen might be willing to transfer their lands to Government ownership (with reservations). Several others doubted whether the Government could carry a load (with expense exceeding income) which the lumbermen had found too heavy and spoke of the Government operating in the red, as lumbermen, it seems, have acquired the habit of doing.

It appears obvious, to this writer at least, that it is idle to talk of comparisons between private and Federal operation of lands for the reason that the respective objectives are so profoundly different, and especially until we, in the Forest Service, have really tried to make an appraisal of our complete resources in comparable terms, let us say in terms of money. Not until this is done shall we be able to compare private and Federal operations. When it is done, we shall possibly discover that the Federal Government can administer public lands and operate on the black side of the ledger where private operators would find it impossible to do so, because of the aforesaid profound difference in objectives.

Two years ago this writer suggested in the Service Bulletin a possible way to arrive at a valuation of Federal resources. So far as he is aware, no one has since done any evaluating and so in emulation of Cato repeating, "Carthage must be destroyed", he reprints the two-year-old challenge to thought.

FOREST VALUES

(Reprint from Service Bulletin of Feb. 15, 23, and 29, 1932)

We sometimes speak of the lumber industry as a three and one-half billion dollar industry, one that employs more than a million wage earners, and whose products sell for more than two billion dollars. By not sufficiently emphasizing the other values which the forests of the Nation possess, we permit the drawing of an unbalanced picture, and one which is accepted by many as correct.

I take it as admitted that part of our effort must always be expended in Educational work. We must let the public know what we are doing and why we are doing it. Most certainly the thing they want to know is what the forest means to them. They can grasp it easiest in terms of money value.

I submit that we are not and have not been giving them a complete and well balanced picture of the meaning of the forest.

We have placed a money value on the timber, but having found it difficult to place values on recreation, water, soil building, etc., we have called such values intangible and let it go at that. Are they intangible? I would like to offer for criticism a possible approach to the measurement of forest values, and will choose Recreation first.

In economics, value is taken to mean value in exchange, and the amount of money that passes in the exchange of money for goods or services is a measure of this value. If, then, we know what people paid for their outdoor recreation, have we not an economic measure of its value that may be considered as at least a tentative one?

Last year nearly thirty-two million people visited the National forests alone. State Park areas received some forty million visitors and the National Parks nearly three million. This is a total of seventy-five million. Many heads have been counted more than once in the National Forest tabulation and the same heads may also have been counted in National and State Park estimates. Possibly less than half of this total figure, say 25,000,000, would be more nearly correct, but they all were seeking recreation. What was its value to them?

Forty million people went to State Parks. Are we justified in assuming that they spent $5 per day and stayed one day? If so, the total spent would be $200,000,000. Is this sum a measure of the value of State Parks to these visitors?

The Special Senate Committee on Wild Life Resources reports that hunters and fishermen have increased 400 percent in the past ten years and that they spend six hundred fifty million dollars annually to take game and fish. I have seen the figure ten million as representing the number of hunters and fishermen in the U. S. and a compilation by the Southern Newspapers Publishers' Association gives 4,420,000 for fourteen of the Southern and Southwestern States alone. For the National Forests I estimate a total expenditure of $131,267,000. Speaking nationally, now, total annual expenditures so far are $981,267,000, which it is suggested be considered as a value for the resources mentioned because that much money has been exchanged in order to enjoy them.

In the attempt to calculate values for the National Forests alone, I have used the American Automobile Association's Research unit figures. They say that the average tourist spends 7½ dollars per day and spends on an average 12 days on a trip. They have divided his expenses into merchandise 26 percent, eats 20½ percent, hotels and rooms 17.3 percent, auto accessories, gas and oil 11.5 percent, theaters and amusements 8.5 percent, confectionery and incidentals 5.9 percent, miscellaneous 10.3 percent. They say forty-five million people took vacation tours in 1929 (a peak year), and spent three and one-half billion dollars. I quote from their study --

"Percent of Total

Far West, Great Lakes, and Southwest	59
Northwest	7
Northeast	11
Central Appalachian	9
"Home-staters"	7
Southeast	5
Gulf and Central	2
	100

"In 1929 the average daily trip was estimated to be 234 miles as compared with 100 miles in 1919. As a result, tourist expenditures were more widely distributed. It is estimated that 33 million motorists stopped at hotels in 1929 and spent over 2½ billion dollars. Twelve million motorists camped out and spent over one billion dollars. We estimate that in 1928, the total number of motor tourists reached 44 million; 32 million of whom stopped at hotels and resorts, while 12 million either camped or patronized cottage camps. They drove 11 million cars. Hotel tourists took trips averaging ten days and spent an average per capita sum of $7.50 per day, making a total estimated expenditure by hotel tourists in 1928 of $2,392,500,000. Campers averaged 30 days afield and spent $3.30 apiece a day, making a total estimated expenditure by campers of $1,197,900,000."

Modifying this estimated $7.50 daily outlay by eliminating the 20 percent for eats, (a generous cut), because it would have been spent in any case and so as to apply a figure to National Forest visitors, we might assume, to be conservative, that the special use permittees spent $2 per day. Hotel and Resort guests $5, Campers $2, Picnickers $1, and Transients $3. A tabulation of values would be something like the following: The transient figure may very well be challenged.

Classification	Number	Days Spend	Amount
Special use permittees and guests	326,896	12	$ 7,846,000
Hotel and resort guests	1,330,610	5	33,265,000
Campers	1,980,736	3	11,884,000
Picnickers	3,272,682	1	3,272,000
Transients	24,993,591	1	75,000,000
	31,904,515		$131,267,000

Would it be right to say that a figure something like this represents the value of the National Forests to these visitors? The value of our timber is what someone will pay us for it. These visitors paid out the above amount although not to us. Is it not, therefore, a measure of value?

I make no claim for the accuracy of figures I have used, since the only object is to suggest the need for correct figures and the presenting of a correctly balanced picture.

It may be claimed that the timber value of the forests of the United States is a perfectly tangible one, and may be set down in figures that will not be challenged, and that figures such as I have given here could be. But with increasing consideration and appreciation of forest values, other than timber, it ought to be possible, after careful analysis, to arrive at minimum figures for these values which would stand up under criticism, and it seems to me that the duty of a Bureau charged with the administration of a Nation's forest lands, should be to supply such figures. People have a right to expect that the Forest Service could give the best answer possible to these questions, as well as to the more intangible ones of spiritual and health values for old and young which are not susceptible to statement in terms of money.

By methods of statistical analysis, that is by taking samples and using questionnaires on recreationists, we could secure, without expending too much time or money, figures that wouldn't exaggerate too much. Each Supervisor, if a plan were given him, might readily work out for his Forest, values for water, grazing, timber, recreation, and the complete picture would show a tremendous total of money values which are dependent on forests and therefore on foresters.

It is difficult but I think not impossible to arrive at values for water for irrigation, power, and domestic use. Our Forest Service figures show that in twelve western National Forest States in 1919 (rather elderly figures) there were 15,824,172 irrigated acres served by National Forest watersheds. The total capital invested on these lands is given as $541,713,000 and the value of irrigated crops on them is given as more than $621,000,000. These figures might be used to represent values dependent on the forests.

Supervisor Mendenhall, of the Angeles Forest, has worked out a value for water for irrigation and domestic uses on his Forest of $13 per acre, and if this figure were used, we should have a valuation for the acreage served by National Forest watersheds of many millions of dollars. I have seen figures which would give a much higher valuation per acre than this, and much time would have to be put into a study of the situation before any satisfactory figure might be reached, but it seems to me that we can do this.

A total population of 3,765,000 people in 782 municipalities (1930 figures) depend for their water on watersheds wholly or partly within National Forests. The value of this water is, in a sense, infinite since these municipalities must have it, but a certain measure of the value placed upon it may be derived from a consideration of the cost of the structures erected to impound and distribute the water.

Let's see what the water picture looks like, using such meagre data as are available and making a few assumptions where no data are available. Figures obtained from the Reclamation Service show that $214,877,000 has been spent on project construction work, and that the total capital invested in land under the various projects is $265,452,000. This makes a total of $480,330,000 all of which invested capital depends on water. The drainage area supplying these various projects is about 262,712,000 acres. The dependent value per acre, that is value dependent on water, is $1.83 per acre and this figure might be used to obtain an approximation to the value of National Forest drainage on say 100,000,000 acres, giving a total value of $183,000,000.

Figures obtained from the Federal Power Commission on seven projects scattered over several regions and of varying size give a construction cost of $62,672,580 under a drainage area of some 4,032,000 acres which gives a dependent value per acre of $15.50, which figure again might be used to obtain an actual or potential value for power purposes of National Forest drainage.

Another method of arriving at value for power purposes would be to use a figure of, say, $200 per installed horsepower for the potential power under National Forest drainage, but the only figures we have are for Department of Agriculture permits which do not include all actual installations and there is no estimate for the potential power.

In the absence of data it might be assumed as a possibility that 25 million acres of our drainage would contribute to power. At $15.50 per acre the actual and potential value of the water would be about 388 million dollars.

The deposition of forest litter and the soil building process is another forest value. This may defy measurement and it may be best not to attempt it. However, Alway and Zon (Journal of Forestry May 1930) have worked out a value of $2.30 per acre for pine leaf litter in the Minnesota pine region based on the carload-lot cost of the nitrogen, potash, phosphate, sulphur, and lime contained in the litter, and W. R. Mattoon has found that similar values obtain in longleaf and loblolly pine litter. I find that we have no data of this kind for hardwood litter but have found several persons who are willing to hazard a guess that the hardwood litter analysis would give at least as high a value as the pine leaf.

There are 469,000,000 acres of hardwood and coniferous forests in the United States ceaselessly at work contributing these values to the forest floor, building soil and keeping it porous. Dare we say that $1 per acre might represent an average value for the litter they deposit? If so, we have a total annual value of $469,000,000 for this item for the United States as a whole and $81,200,000 for National Forest lands. We might very well reject these figures, and say that it is impossible to measure this value. Even so, it is not an intangible. It is real and substantial, and should have a place in the picture.

By taking the F. S. estimate of 550 billion feet of timber on the National Forests and assuming a value of fifty cents per thousand, we get $275,000,000 as a value for the timber. The value of stock grazed on the Forests last year, at prices current at the time was $76,216,000. This is an invested value the total of which, doubtless, can not be said to depend on the forests, but much of it is so dependent and is dependent on the continuance of good grazing practice. Perhaps we can arrive at an estimate of this dependent value if we study the matter.

A tabulation of the values discussed in these Bulletin items, set down in the order of their relative totals would look something like this.

Resource	Total Value	Source of Data
Water (Power)	$388,000,000	Based on assumption of a drainage area figure
Timber	275,000,000	F.S. estimate of volume assuming a value of 50 cents per thousand.
Water (Irrigation)	183,000,000	Construction cost and land values (Based on Reclamation Service figures)
Recreation	131,267,000	Forest Service estimate of visitors and Am. Automobile Assoc.
Grazing (Value of Stock)	76,216,000	Forester's report and Dept. year book
Soil Building	Not practicable to measure?	Zon and Alway Studies
Total	$1,053,483,000	

This total of over a billion in values is in my judgment small.

All of the values in the above tabulation are total invested values except recreation, which is an annual expenditure. I capitalized this figure at 5 percent but the resultant amount scared me. It is $2,625,340,000. However, for 32 million visitors it amounts only to $82 per person, which seems reasonable.

Many questions may be raised to any such figures as I have given; such as the proportion of estimated values that may be justly said to belong to the forest, and the proportion that is incidental to their management as public properties; which particular forest areas have high values and which low; and other such objections. But I would say "Let the objectors first try to evaluate before they object". What I see is the need for a balanced picture of what forests mean, and my basis for this particular method of evaluation is that if amounts such as I have found, or any others which our Supervisors may arrive at which seem more nearly correct, have been spent, or exchanged for these various factors, they constitute a measure of value. It doesn't seem to me to be enough to simply mention that we have other resource factors than timber and grazing (on which we give figures) if we can in any way arrive at an economic measure of their value. We gather these figures on timber receipts with estimated stand and growth and grazing receipts with value of stock grazed. Why not include the money values of water, recreation, and anything else we have in the picture? Why not have figures for both Forests and Regions on receipts from and investments in power plants, irrigation projects and recreation areas, if they are dependent on the forests? These receipts will come not to the Federal Government, but to its citizens, and the expenditures will be made by them, but we are charged with administering the Nation's forests on which these values are in some measure dependent. If we know what these values are, we shall have a better basis for planning our own investments in time and money. The suggested way of measuring them is, I believe, a sound one, and I believe, too, that such values should always be stressed when we attempt to give people a picture of what forests mean. You see - I am afraid someone hearing us talk will get the impression, if they have not already received it, that we are nothing but a timber growing outfit; one that competes with the lumbermen and does a bit of grazing business on the side.

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When are we going to begin keeping books on all our forest resources?

WOODRING SEES MILLION C. C. C.'S NEXT SUMMER

That a million young men will be enrolled in the Civilian Conservation Corps by next summer is a prophesy by Harry H. Woodring, Assistant Secretary of War, in an article entitled "The American Army Stands Ready," in the January 6th issue of Liberty.

"Despite prospects of improvement in the coming months, I prophesy that by next summer a million young men will be enrolled in the Civilian Conservation Corps," the Assistant Secretary of War writes. "While unemployment is rapidly decreasing, there have always been large numbers of unemployed in this country."

He points out that C.C.C. camps may be the forerunners of the great civilian labor armies of the future.

"I should also like to see extended to every unemployed veteran of the World War who desires it an opportunity to enroll in this corps. I should like private industry this winter to adopt a rule by which one disabled veteran would be given a job for every hundred able-bodied workers, thus supplementing the present reduced federal outlay on pensions.

"I should like to see a physical education program developed in these camps that would not only make their members familiar with games but would give them such skill that when they return home they would be leaders on recreational programs among their own people.

"I should like to see them organize athletic associations like the German Turnvereins and the Sokols of Central Europe, which would result in raising the physical standards of our entire population.

"In my opinion next year the individual C.C.C. set up should be eliminated in the interest of economy and efficiency and the whole program taken over by the Army as part of its regular duties. We do not desire to make soldiers out of the C.C.C boys against their will, but we do desire to help direct and develop this great experiment in long-range social economics and in physical training." ***

"Our young officers are receiving lessons in practical leadership. The Army's traditional 'hard-boiled' theories of discipline have had to be disregarded in favor of force of character and natural leadership. The result in the American Army of the future will be better morale and better relations between officers and men."

Woodring believes "the Army should take over the work of rationing the unemployed which is now being admirably performed by the Federal Emergency Relief Administration. This is solely in the interest of efficiency and economy. I urge these basic reforms."

he continues, "in no narrow spirit of selfishness on behalf of the Army, which is trained to do its duty without thought of public praise." - From R-5 Bulletin

THE PLODDING FORESTERS

Promising as a spectacular sunrise, opportunity shines on forestry's skies. Yet, like toil-dulled plowmen, America's foresters are plodding the furrows, eyes downcast and shoulders bowed, uninspired by the prospects of this new day.

For proof it was but necessary to attend the meetings of the Society of American Foresters in Milwaukee. The nation's forest leaders were there. They arranged the meetings and devised the programs.

Young men came to hear them—young men but recently enlisted in forest work; young men who have been falling over brush piles in Michigan, dragging chains, running lines, and wondering about the purpose; young rangers from Wisconsin and Minnesota, ambitious and sensing new objectives; young men from other States, vaguely aware of the new forest movement and eagerly seeking guidance.

And what did they hear? Speakers intoning the ancient forest problems; meticulous discussions, cautious screeds, expounded heavily, by voices dull and low and muttering.

Not one speaker, thrilling under forestry's magnificent new opportunity, pronounced the new leadership. Not one told the young foresters that into their hands have come some 310,000 C.C.C. boys who may be led to worth-while accomplishment in America's woodlands. Not one explained that suddenly almost limitless man-power and adequate money has been provided by an inspired President.

Nor, among those foresters, was there one to address the youngsters now in the service and tell them why and to what purpose they are bucking snowdrifts, running lines, blazing trails of trees or burning brush. The youngsters came anxiously, hopefully, thinking to hear, perhaps; "Here lies your future, and it is a glorious one!" They left doubtfully, wonderingly, without the message that today ought to be throbbing in the heart of every mature forester.

A President at Washington desires not only to lift men out of depression by giving them jobs in the woods; beyond that he has a hope and an ideal. He wants to reconstruct American forests and looks to his foresters to achieve the goal. He has made that clear. Yet they gather and miss the inspiration!

If America's present foresters have become thus dulled by long struggle and professional adversity, then it is time to replace them. The need today, with today's opportunities, is for vibrant, forceful, sun-crowned men. The need is for leadership that not only knows, but inspires.

The Journal is the time-tried friend of forests and foresters. It was urging conservation when today's foresters were in swaddling clothes. It does not now turn against the men who have struggled and toiled and made hard, slow progress in the face of difficulties. But it warns those men that they need renew their faith and their inspiration if they are to accomplish what now must be accomplished in this era of forestry's greatest opportunity. -- Editorial, Milwaukee Journal.

THE EDITOR OF THE MILWAUKEE JOURNAL COMMENTS ON HIS EDITORIAL

Dear___________:

Thanks for your letter. I'm not so sure about the justification for that recent editorial. Yes; the foresters' meetings (at least on the first day) were hopelessly dull; I think criticism was warranted. But mine really was predicated on more than the meetings. It was the outcome of reactions to foresters and forestry over a period of years. It was not fair to lay the blame on the innocently complacent program of the Society of American Foresters. The program merely revived the old questions: "What's the matter with foresters in general; with the great profession of forestry?" The answer seemed to be: "This program is dull because the men here are not inspiring. Their discussions are meticulously earnest, but lack vigor and sparkle. Foresters in general seem to lack these. The forestry profession seems to have developed an inferiority complex." On that theme I criticized the meetings when, in fairness, they should have been declared merely symptomatic and the cricisism should have been more definitely expressed and directed.

But now let's get one thing straight: I have not at any time criticized the work of foresters generally or the federal foresters specifically.

The work has been magnificent. It continues to amaze me. The fact that you have been able to take thousands of men and put them to anything constructive is an astonishing performance.

Your own criticism (at the recent meetings) of your forestry program was unjustified. That you and the Service should have any kind of program at all, when suddenly confronted with thousands of units of labor where you had no reason to plan for more than a few hundred, is further cause for amazement.

In fact, that the C.C.C movement has swiftly won public sympathy and approval is due to the foresters-- and primarily to the federal foresters--and their remarkable ability and energy.

But now I want to see the foresters take their proper place in the estimation of the people. It is their own fault that they haven't. Hard work alone never wins a proper reward. I need only cite the example of the faithful old bookkeeper who climbed onto his chair every morning at seven o'clock without losing a day in fifty years. He performed faithful service. He deserved not only his employer's praise, but adequate compensation and general public respect. But did he get them? Certainly not.

So with the foresters. Their good work alone will not establish them. They have got to get over their inferiority complex and they have got to do it competently and gracefully.

That certainly does not mean bombastically. It does not mean, for instance, an open row with the army officers on their social status in the camps. A social status never is gained by demanding it--at least not in words. It is gained first by deserving it and next by intermingling a certain amount of hooey into our daily attitudes.

Specifically, the army is not going to be impressed (nor, for that matter, the public) by groups of young foresters rigged out in nondescript khakies and proud of their disheveled appearance. It is not going to be impressed by men careless of their personal cleanliness or by superior officers in a service that will permit it.

Neither will proper respect be gained so long as the Forest Service tolerates ramshackle quarters for its people, desolate offices for its supervisors, and any old conditions for the foresters and their families.

The alternative is not extravagance. It does not mean a bombastic demand upon government to provide mahogany furniture at headquarters or ornate buildings in the woods. Not at all. Respect will come when the efficiency of the Forest Service is such that before it will occupy a place, it will adequately and effectively renovate it. It will come when the Forest Service, moving even into the wilderness, will there set up a camp so orderly and so well devised as to be the envy of every outdoorsman. It will come when foresters as a matter of course create for themselves the best possible conditions under any set of circumstances. And it will come when they, themselves, adopt a uniform of which they're proud and personal habits of which they need not be ashamed.

Well, I'm afraid I'm getting involved again. The foresters, by their good work, have made forestry what it is and have themselves created most of the progress that has come. Now that their work is bearing fruit, I want them to get the benefits of that fruit. One of those benefits is a proper place in society. And, of course, when I use the words "social" or "society", I am using them in their broad aspect.

Yours very truly,
F. W. Luening
Editor, Milwaukee Journal.

OLD STUFF

The works of the Regent's Canal were resumed on His Royal Highness birth-day; the completion of the tunnel being the first object, until arrangements can be made for employing the unoccupied poor along a space of more than six miles in the different parts and work of the canal, from the Hamstead-road to the basin at Limehouse. -- From the London Courier, Aug. 15, 1817.

SIGNS OF LIFE

Timber sales receipts for the first half of F.Y. 1934 totaled $749,155, an increase of 83 percent over those for the same period in F.Y. 1933. The total is within $10,000 of the net receipts from timber sales for the entire F.Y. 1933. All Regions except Region 5 contributed to this increase for the half year, and only Regions 3 and 5 failed to make a gain in the second quarter of the year. Timber sale receipts for that second quarter were about $314,000, a gain of 40 percent compared with the same quarter in F.Y. 1933. Receipts for the full fiscal year can not be expected to continue to exceed those in F.Y. 1933 by such a large ratio as 83 percent, but practically everything taken in during the second half of the year will be increase.

For the half year, Region 6, with $305,442, took in about 40 percent of the total. Regions 7, 3, 1, 2 and 5 followed, with sales receipts of from $94,000 to $68,000. Region 4 did surprisingly well under the circumstances, with about $25,000, and Regions 8 and 9, with $10,000 and $4,000 respectively, joined in the upward trend for the half year and for the quarter. - E. E. Carter

CCC SAYS

They tell us that we fought forest fires 370,857 man-days during the period ending September 30 for the Forest Service and contributed besides 45,730 man-days to fire prevention and presuppression, whatever those last two items mean; also that we built numerous airplane landing fields, 3,709 miles of fire breaks, did 4,222 miles of roadside clearing, and removed or reduced fire hazards on 114,576 acres.

Maybe this helps to account for the season 1933 showing the best fire protection record in the history of the National Forests, and that's about 29 years next month. Also we are told special fire fighting expenditures were less than $350,000 in 1933 for the same period as against a 5-year average of $2,256,417, and that there was a decided drop in incendiary fires.

But listen to this: The Form 7 monthly report hounds back in Washington are broadcasting that 88 percent of the December reports were right under their noses on schedule this month (if they were not actually covered up with 1,000 reports out of 1,140 due and 25 States actually completed on the dot), and this against 35 percent last month and only one State in, complete, on the dot. Looks like we are going over the top next month. — J. H. Hatton

FAN LETTER

To the Head Man of the Radio Programs,

While you are broadcasting the rest of your program now, as I have just heard you say, there will be no Jerry Quick and the rest of the cast, that has become a part, of we simple folks lives, that is on Thursdays, I want to say I have a little shop here, in which we try to make a living, and on Thursdays we have an audince. or whatever you would call it, and we all are plenty disappointed, for its so tiresome and disgusting and at times tragic, listening to some long winded government leach, seating up there by a steam radiator and all the other nice things that we poor dumb tax payers still pay for, well that is all right, but you know how idiotic it really is to set and hear supposedly smart people tell you how to grow more cotton hogs and wheat and then in that nights papers and over the Radio hear the same people tell you to plow it up or kill your hogs or something as crazy, well we are all fed up on that hooey, and the Jim Robbinson and Jerry and Mary and all the rest were so refreshing, so please put them back on and leave off some of those long winded second and third and even fourth, Postmasters generals, you can raise my taxes for programs like the Forest Rangers put on. - CLEO "ANDY" GUMP, Coffeyville, Kansas

ANOTHER INEXPENSIVE WIND GUAGE

By E. W. Hadley, Osceola

The Service Bulletin of December 4 contained an article by H. T. Gisborne of the Northern Rocky Mountain Forest Experiment Station entitled "Inexpensive Wind Guage".

On the Ocala National Forest in 1928 the writer devised a very satisfactory wind guage for use on primary lookout towers by attaching a small windmill fan to the other end of an ordinary automobile speedometer cable and mounting the entire outfit including the speedometer on a horizontal swinging stand with a vane to keep the fan facing the wind. This outfit was calibrated as described in Gisborne's article by adjusting the angle of the fan blades until the speedometer attached to the fan registered the same number of miles per hour as that of the car on which it was being carried on an absolutely calm day. This outfit costs about $10 and the exact velocity of the wind in miles per hour could be read from the speedometer dial instantly without necessity of making counts and timing of any kind. Furthermore the trip mileage part of the speedometer could be set and the total miles of wind passing the guage for any length of time could be determined.

If any one is interested in this type of wind guage the details of construction will be furnished on request.

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SERVICE BULLETIN

CONTENTS CONFIDENTIAL

WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER. Theodore Roosevelt

Vol. XVIII No. 5 Washington, D. C. February 26, 1934

STATESMANSHIP AND RELIGION

(From an address by Secretary Wallace before the Federal Council of the Churches of Christ in America, Washington, D. C., Dec. 7, 1933)

To enter the Kingdom of Heaven brought to earth and expressed in terms of rich material life it will be necessary to have a Reformation even greater than that of Luther and Calvin. I am deeply concerned in this because I know that the social machines set up by this Administration will break down unless they are inspired by men who in their hearts catch a larger vision than the hard driving profit motives of the past. More than that the men in the street must change their attitude concerning the nature of man and the nature of human society. They must develop the capacity to envision a cooperative objective and be willing to pay the price to attain it. They must have the intelligence and the will power to turn down simple solutions appealing to the short-time selfish motives of a particular class. ***

It is possible for powerful men in positions of financial influence or in control of certain fundamental mechanical processes to pose as hard-headed men of affairs when as a matter of fact they have all too often created temporary illusions; they have been merely blowing bubbles. By the manipulation of money, the floating of bonds, they have distorted the judgment of our people concerning the true state of future demand and future supply. Oftentimes with excellent motives and looking on themselves as realists, they were in fact sleight-of-hand performers and short-change artists. Yes, we have all sinned in one way or another and we are all sick and sore at heart as we look at the misery of so many millions of people, including among them many of our close friends and relatives; and we ask again and again why this should be so in a Nation so blest with great resources, with nearly half the world's gold, with great factories, with fertile soil and no embarrassing external debt. We look at all this and ask what mainspring inside of us is broken, and where can we get a new mainspring to drive us forward. ***

Neither socialism nor communism meets the realities of human nature as I sense them. Both of them have an emotional dryness, a dogmatic thinness which repels me. They deal in the dry bones of the "economic man", and I crave in addition the flesh and blood and spirit of the religious and the artistic man. I want to see whole realms of being kept out of the sphere of economics and business. The economic and business machine should be subjected more and more to the religious, the artistic and the deeper scientific needs of man. The business man prompted all too often by short-time profit motives has had altogether too much influence; or possibly I should say that his ideals have caused the Nation to put entirely too high a percentage of its energy into efforts which were bound to be self-defeating and eventually productive of unemployment and misery.

It is proper that we should respect the business man in his true sphere. He should be encouraged to develop a social machinery which will make it possible to bring about an equilibrium from year to year between productive power and consumptive power. He should be encouraged to work out social machinery to bring about as nearly as possible a just distribution of our physical output to the different individuals of the Nation. For rendering his technical services, the business man should, like all the other elements of the population, be assured of a fair salary and a modest return on capital, combined with such assurances of security as may be possible in view of the resources and productive power of the Nation. ***

We are approaching in the world today one of the most dramatic moments in history. Will we allow catastrophe to overtake us, and as a result force us to retire to a more simple, peasant-like form of existence, or will we meet the challenge and expand our hearts, so that we are fitted to wield with safety the power which is ours almost for the asking? From the standpoint of transportation and communication, the world is more nearly one world than ever before. From the standpoint of tariff walls, nationalistic strivings, and the like, the nations of the world are more separated today than ever before. Week by week the tension is increasing to an unbelievable degree. Here reside both danger and opportunity.

The religious keynote, the economic keynote, the scientific keynote of the new age must be the overwhelming realization that mankind now has such mental and spiritual powers and such control over nature that the doctrine of the struggle for existence is definitely outmoded and replaced by the higher law of cooperation. When cooperation becomes a living reality in the spiritual sense of the term, when we have defined certain broad objectives which we all want to attain, when we can feel the significance of the forces at work not merely in our own lives, not merely in our own class, not merely in our own Nation, but in the world as a whole-- then the vision of Isaiah and the insight of Christ will be on their way toward realization.

This spiritual cooperation to which I refer depends for its strength on a revival of deep religious feeling on the part of the individual in terms of the intellectual concept that the world is in very truth one world, that human nature is such that all men can look on each other as brothers, that the potentialities of nature and science are so far-reaching as to remove many of the ancient limitations. This concept which now seems cloudy and vague to practical people must be more than the religious experience of the literary mystic. It must grow side by side with a new social discipline. Never has there been such a glorious chance to develop this feeling, this discipline, as in this country today.

CORRELATION OF LAND PLANNING PROGRAMS

By L. F. Kneipp, Washington

The importance of land as a fundamental factor in our future National economy is rather strikingly indicated by the number and variety of land use programs now receiving consideration in Washington. Probably the initial phase was the President's decision to accelerate the consolidation of the National Forests in the Eastern States so as to create the most effective conditions for the employment of the Civil Conservation Corps. To this end he allotted twenty million dollars for the purchase of lands. To date slightly less than two and three-quarters million acres of land have been approved for purchase from this fund. In addition to largely facilitating the better use of the CCC, this newly acquired land also has been an important factor in promoting the employment of men under the NIRA program and the CWA program.

In course of time, the desirability of similar action in connection with the National Parks and later in connection with the wild life game refuges administered by the Biological Survey also became apparent and proportionate allotments for those purposes have also been approved.

The next step was the development of the subsistence homestead movement, which is now an established procedure. Many projects situated in a large number of States have received or are receiving attention and specific approvals of particular projects gradually are developing. The relationship of this movement to the betterment of conditions within many of the National Forests has been recognized and has influenced at least some of the pending cases.

Still more recently there have been wide acceptance and approval of Secretary Wallace's proposal that the Federal Government purchase and withdraw from farm crop production an adequate proportion of the poorer type of farm lands in the United States so as to bring farm crop production into correspondence with National requirements and export possibilities. Here again, many of the lands falling within the scope of this program can be found within the National Forests, and there is recognition of the fact that the acquisition of such lands not only would achieve the original objective of reduced farm crop area but also would contribute to the long standing objective of National Forest extension.

Beyond these definite programs of action there are other direct and indirect relationships between land economy and the financial relief activities of the Federal Government which involve advances of funds to owners of different types of lands.

In consequence, the need for some systematic coordination of Government activities is recognized. As a step to that end there was created several months ago in the Public Works Administration a National Planning Board whose function will be to develop definite plans of land use and economy for the United States. This agency is now collecting primary information as to Government land holdings, objectives of management, necessary extensions thereof, and inter-relations of land use and management. The Forest Service has just made its initial contribution of data to the National Planning Board and from time to time more detailed information, together with specific plans, programs and recommendations, will be submitted.

Out of this movement there gradually will evolve a well coordinated and articulated Federal program of land ownership, management, and use, in which the National Forests will undoubtedly occupy a conspicuous place. This will mean numerous requests to the field officers for one type of data or another, some wholly new in character and some to replace earlier data which have become obsolescent because of the economic and social changes which have occurred since the first data were compiled. However, the field officer should not begrudge the time required to secure and compile the information requested since if properly used, as circumstances indicate it will be, it will contribute toward the development of a wholly adequate, permanent, and intensively managed system of National Forests commensurate with the future needs of the people of the United States.

FOREST CONSERVATION CONFERENCE

The Forest Conference on Article X of the NRA timber code reconvened in Washington on January 25 and 26. With few exceptions, the public and industrial groups were represented by the same conferees and advisors that were appointed for the meeting last October. The six original committees met for three days prior to the general conference and considered in detail the regional proposals as submitted by the several Divisions and Subdivisions of the Lumber Code. The recommendations of these committees were then presented to the general conference for consideration and final approval.

A general agreement was reached that the original regional woods practice measures, which were returned for re-writing by each division, will be submitted to Lumber Code Authority for final action. It is assumed that the permanent committee, later described, will be given an opportunity to review these rules before final approval is given on them. When approved they become a part of the Code and will be legally enforcible to the same degree as any other section of the Code.

Some of the important points brought out and agreed upon were:

(1) The Conference mutually recognized the fact that, even though the Lumber Code is an industry undertaking for which it is responsible, the public interest in the conservation of forest resources together with a stewardship for public expenditures connected therewith is sufficient to justify non-voting Federal representation in the Divisional Code Administration of Article X and so recommended.

(2) Agreed on basic principles of forest practice which shall govern the conservation provisions of the Lumber Code.

(3) Recommended that all forest lands in private ownership, both large and small, including farm woodlands be subject to the conservation objectives of Article X of the Lumber Code.

(4) Agreed that the Divisional provisions for forest practice under the Code should be subject to review and approval by the Lumber Code Authority, working cooperatively with the Executive Committee set up by this Conference.

(5) Recommended that Article X of the Lumber Code be revised to include the basic provisions for forest conservation on private lands and definite authority and instruction to enforce the rules necessary to carry out these provisions.

(6) Endorsed the forest land acquisition program set forth in the Copeland Report with the further recommendation that under this program not less than 150 billion feet of standing timber be acquired.

(7) Recommended that entire authorization of $2,500,000 under the Clarke-McNary Act for cooperative fire protection be appropriated and made available for the Fiscal Year 1935 and thereafter appropriations should be increased as needed to a maximum of $10,000,000.

(8) Stressed the necessity for sustained yield as an ultimate objective in forest conservation and recommended preferential treatment in Code production allotments as an incentive to owners to place their operations on such a basis.

The Conference recommended that a permanent Executive Committee of 10 members be organized, 5 from the lumber industry to be appointed by the Chairman of the Lumber Code Authority and 5 from public agencies to be appointed by the Secretary of Agriculture.

This action has been taken and the membership of the committee is as follows:

Public Representatives	Lumber Industry Representatives
Earle H. Clapp Forest Service	W. B. Greeley West Coast Lumbermen's Assn. Seattle, Washington.
Ward Shepard Indian Service	D. T. Mason Western Pine Assn., Portland, Oregon.
W. G. Howard State Forester, New York.	G. F. Jewett Potlatch Forests Inc., Coeur d'Alene, Idaho.

O. M. Butler
American Forestry Assn.

B. P. Kirkland
Forest Service

A. G. T. Moore
Southern Pine Assn.
New Orleans, La.

A. B. Recknagel
Professor of Forestry
Cornell University,
Ithaca, N. Y.

It will be the duty of this committee to arrange for carrying out the proposals and recommendations of the Conference and to work cooperatively with the Lumber Code in all matters of mutual interest in connection with Article X.

The Conference, it is felt, has brought about a better mutual understanding between private industry and public agencies, established the desirability of non-voting Forest Service representation on Divisional Agencies when dealing with forest conservation, the necessity for a central review and approval of all woods practice provisions before they are issued as legally enforcible rules under the Code, and has set up as an objective, toward which constant progress should be made, the principle of sustained yield forest management. The way is now open for the Forest Service to contribute to the fullest extent in technical guidance and leadership.

GROUND SLOWLY, BUT FINE

By E. E. Carter, Washington

On January 8, the Supreme Court of the United States reversed the Circuit Court of Appeals for the Ninth District in the "California white pine" case, and thus sustained the order of the Federal Trade Commission banning the use of "white" as applied to lumber cut from *Pinus ponderosa*. The opinion includes: "The respondents sell it" (lumber cut from *Pinus ponderosa*) "under the name 'California white pine' and under that name, or at times 'white pine' simply, it goes to the consumer. In truth it is not a white pine, whether the tests to be applied are those of botanical science or of commercial practice and understanding ...... Many retail dealers receiving orders for white pine deliver California white pine, not knowing that it differs from the lumber ordered. Many knowing the difference deliver the inferior product because they can buy it cheaper. Still others, well informed and honest, deliver the genuine article, thus placing themselves at a disadvantage in the race of competition with the unscrupulous and the ignorant. Trade has thus been diverted from dealers in white pine to dealers in pinus ponderosa masquerading as white pine. Trade has also been diverted from dealers in pinus ponderosa under the name pinus pondosa to dealers in pinus ponderosa under the more attractive label. ...... The wood ...... is not substantially as good as the genuine white pine, nor would sales under the wrong name be fitting if it were. ...... There is a suggestion ...... that ...... the retailers, buying the wood cheaper, may have lowered their own price, and thus passed on to the consumer the benefit of the saving. The inference is a fair one that this is not always done, and perhaps not even generally. ...... But saving to the consumer, though it be made out, does not obliterate the prejudice. Fair competition is not attained by balancing a gain in money against a misrepresentation of the thing supplied. The courts must set their faces against a conception of business standards so corrupting in its tendency. The consumer is prejudiced if upon giving an order for one thing, he is supplied with something else. ..... In such matters, the public is entitled to get what it chooses, though the choice may be dictated by caprice or by fashion or perhaps by ignorance. ...... There is no bar through the lapse of time to a proceeding in the public interest to set an industry in order by removing the occasion for deception or mistake, unless submission has gone so far that the occasion for misunderstanding, or for any so widespread as to be worthy of correction, is already at an end. Competition may then be fair irrespective of its origin. This will happen, for illustration, when by common acceptation the description, once misused, has acquired a secondary meaning as firmly anchored as the first one. Till then, with every new transaction, there is a repetition of the wrong. The evidence here falls short of establishing two meanings with equal titles to legitimacy by force of common acceptation. ..... Finally, the argument is made that the restraining orders are not necessary to protect the public interest, but to the contrary that the public interest will be promoted by increasing the demand for pinus ponderosa, though it be sold with a misleading label, and thus abating the destruction of the pine forests of the east. The conservation of our forests is a good of large importance, but the end will have to be attained by methods other than a license to do business unfairly. ...... The (Federal Trade) Commission did not abuse its discretion in reaching the conclusion that no change of the name short of the excision of the word 'white' would give adequate protection."

The case originated in 1929, and has thus required nearly four years for final settlement. Meanwhile "western yellow pine" as the official Forest Service name (mentioned in the decision, by the way) has been superseded by "ponderosa pine" to conform with the name used by most producers.

The decision is a landmark in the effort of the Forest Service, continuous since the old Bureau of Forestry was organized, to bring order out of the chaos of common names for trees and their products. The "masquerading" of one wood under the name of another, for the financial advantage of the producer and to the confusion of the consumer, has been frowned on by the highest court in the land.

The opinion, as printed, does not recognize the standard practice of scientific workers, when Latin names are used, of beginning the generic name of a plant with a capital letter. But form is unimportant and substance is vital.

The Supreme Court subsequently refused to grant a rehearing of this case.

YE EDITOR DISCOVERS

The National Forest Reservation Commission will hold its next meeting on February 21. Present indications are that the program of land purchases will involve between one quarter and one half million acres of land. If time affords, an effort will be made to get the Commission's consideration of the future policy and program of purchases under the Weeks Law.

Representative Roy O. Woodruff of Michigan has been appointed a member of the Commission by Speaker Rainey to fill the vacancy left by the death of Representative John B. Clarke of New York. At the same time, Speaker Rainey reappointed to the Commission Representative Wall Doxey of Mississippi.

Representative Woodruff, who comes from Bay City, Michigan, has taken an active part in forestry legislation in Congress for many years and is co-author of the Woodruff-McNary Bill. His keen and long-continued interest in forestry and conservation problems of the entire country especially fits him for service on the Commission. He is the first member of the Commission to come from the region of the Lake States.

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Changes in the Civil Works program have been many and frequent within the last two days (February 14). The bill appropriating funds to continue the program as passed by the House discontinued all Federal projects. They were reinstated by the Senate. The compromise reached by the conferees provided that going Federal projects could be continued only long enough to bring them to a reasonable degree of completion. This led to a ruling by the Civil Works Administrator, Mr. Hopkins, that Federal projects must be cut 50 percent on February 15 and 10 percent each succeeding week until May 1, when the program will be discontinued.

During the discussion of this section of the bill there was a decided showing of sentiment against continuing Federal projects on private land. As a result, mosquito control work and similar projects being carried on by other Federal Bureaus have, we understand, been totally eliminated. This is making it possible for the Forest Service project which is devoted entirely to Federal lands to be continued on approximately an 85 percent basis for the week following February 15. Gradual reductions will then follow so that the project will be brought to a close on May 1.

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By developing simple means of stopping leakage of liquid and gas through the pores of red oak, the Forest Products Laboratory has overcome the outstanding obstacle to the use of red oak for beer barrels. Eight or more species of American red oaks are thus made potentially available for brewers' uses requiring 25 million feet of cooperage stock per year and heretofore demanding white oak exclusively.

For the bulk of industrial consumption white oak has long been preferred to red oak, so that reserve supplies of white oak are now seriously reduced in many producing regions, and much stave material is being imported from foreign countries. For beer barrel purposes the two kinds of oak are rated as similar in most respects. The outstanding factor that has until now barred red oak is a difference in pore structure. A natural deposit called tyloses plugs the pores of white oak during growth, whereas in red oak tyloses are absent. Hence the problem of red oak for beer barrels was seen to hinge on practical means of plugging the open pores.

Using ordinary brewer's pitch, the resinous preparation used for internal sealing of all beer barrels, it was found that a red oak barrel could be made as tight as the white oak container by means of a short pressure treatment with the hot liquid pitch standing a few inches deep in first one end of the barrel and then the other. Aside from this procedure, which can be effected in step with the customary spraying operation, the only other change in practice necessary is to calk or pitch the croze or groove of the barrel where the head is drawn in. Hydro-pneumatic tests of red oak barrels so prepared demonstrated that their ability to hold both liquid and gas was in all respects equal to that of white oak barrels.

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Beginning about the middle of March and lasting for a maximum period of three weeks, an intensive training course in radio will be given at the Forest Service Radio Shop, Vancouver, Wash. The purpose of this course is to train at least one man from each Region to a point where he is capable of handling routine radio matters in his Region.

The course will be mainly technical and will cover the repair, care and maintenance of Forest Service radio equipment, tuning and adjustment of radio transmitters, use of test kits and analyzers, installation and adjustment of radio sets, and training of field personnel in operation of radio equipment.

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In normal times the Service employed a total of nearly 500 forestry students on summer work - primarily as a phase of the whole personnel and training program of the Service. Depression pressure cut this down until during the season of 1933 student employment was reduced to almost nothing. In answer to an inquiry from one of the Forest Schools, the

Forester has expressed the hope that during the season of 1934 conditions will have changed enough so that summer jobs can be offered to a total of 100 or 200 men. The opportunity for forestry students to get personal experience in actual National Forest work during college vacations is important both to the Service and to students who expect eventually to enter the Service. It would be unfortunate to find ourselves later on with Junior Forester and Junior Range Examiner registers composed of men who had never had any personal experience at the kinds of work on which students can be employed.

MORE FAN LETTERS

The suspension of the radio program "Uncle Sam's Forest Rangers" has brought many protests and expressions of regret from the radio audience over a wide area. A few of these expressions are quoted to show the attitude of the public toward the program:

"We have been listening to your programs for about 2 or 3 years, but have never made any request but we are among many who would like to have the Forester Program continue."

Mrs. C. C. Craw, Langhorne, Pa.

"I am praying that you will not be absent but a short time. I like to say Howdy! but not goodbye. I wont forget you this side of the golden gate."

Annie J. Sucrow, Wheaton, Maryland.

"I wish to express my keen appreciation of the Forest Ranger program on Thursdays, and my keen regret that it is to be discontinued for a few weeks. I will anxiously look forward to its return."

Fred M. Hewitt, Corning, N. Y.

"The writer does not have time to send out quantities of fan mail but does want to voice her sincere regret at the discontinuance of your program. I have also heard a great many protests about this, too.

"Is there anything that can be done to have you back with us again? If there is, we'll be glad to do it. At any rate we want you back."

Mrs. C. H. Lindow, Muscatine, Iowa.

"We regret very much the loss of the feature Uncle Sam's Forest Rangers from that consistently good program, The National Farm and Home Hour, and hope that this finest of all short dramas will soon be back, presented in the same way."

Cliff Laughlin, Topeka, Kansas.

"We just heard the sad announcement that the Forest Ranger Program was to be discontinued. Our family wont be able to enjoy their Thursday dinner without this program. We certainly hope this Ranger sketch will be returned to the program in the near future."

C. C. Daly and family, Newton, Iowa.

"I enjoy the Farm & Home Hour each day, but Thursday has always been a day neither my husband nor I like to miss. We've felt such an interest in Mr. and Mrs. Robbins, Jerry and Mary, and the Ranger Station that we surely hope he may have the privilege of hearing you all on the air again soon.

"Although I have liked all your programs, may I express a belated appreciation of your lovely Memorial Day program last spring? I think I shall never forget it.

"But please do return soon to the air and all your good friends. Surely such a good program as Uncle Sam's Forest Rangers can't afford to be lost either by the National Farm & Home Hour or its many listeners."

Mrs. W. K. Heeter, Clarion, Pa.

"If wishing hard enough will return the Forest Ranger Program I'm going to bear down on my wishing. It was to my notion the best feature of entertainment, and at the same time instructive, that was to be found on a whole week's program of the Farm and Home Hour. Other programs of the week were good but I enjoyed that one best."

Stacy Hawkins, Homestead, Florida.

"Please put the Forest Rangers back on the Farm and Home Hour. We never missed one of their programs if possible to listen in. You took one of the most delightful features of your programs off when you took them off. I am writing for several people so count this about six requests for their return."

Mrs. G. A. Spencer, Waverly, Pa.

"You just said about one minute ago if we wanted The Forest Rangers we might have them back. H___ yes we want them as they have become a real part of our lives and one of the best programs on the air does not seem complete when they are gone."

Blanchard L. Porter, Shreveport, La.

"It is with sincere regret I learned to-day that 'Forest Rangers' is to be discontinued. I hope you will find it possible to reinstate them. Those characters have come to be real living friends of mine and I know I shall miss them so. I am a regular Farm and Home Hour fan."

Mrs. C. H. Hanson, Silver Spring, Md.

PRECIPITATION FORECAST

By P. B. Lister, Southwestern For. and Range Expt. Sta.

Will this be a Heavy Fire Hazard Year?

This question will be answered in the affirmative if the prediction of Dr. George F. McEwen of the Scripps Institution of Oceanography at La Jolla, California, are realized. Dr. McEwen has just issued the following forecast for the Pacific Coast:

"Accordingly all the evidence points to less than average precipitation during 1933-34 at all of the regions and even less than that of last season as well, except in the Santa Barbara and Huntington Lake areas. The values of the precipitation thus calculated range from about 60-85 percent of the average."

This forecast is of particular interest to Forest officers in California, where "almost 50 percent of the area burned on the National Forests occurred during 1933".

The value of these forecasts is enhanced in view of a statement issued October 15, 1932, i. e., "In general, the available evidence points to considerably less precipitation than last season but not far from the average. Fewer general storms and less snowfall in the higher elevations may be expected."

The records for the year 1932-33 will, I believe, show that "in all of the California regions except the coastal area farthest north, and in the Northern Oregon region, the precipitation for 1932-33 was below that of the previous 1931-32 season, and also below the average computed for the period 1916 to 1932."

Temperatures of both air and sea surface, in connection with rainfall records largely form the basis for these predictions.

CCC SAYS

Do you know that law against changing or misusing labels is still on the statute books? So don't mix it with the Eighteenth Amendment.

After we had nicely handed over at the end of September 2,633,612.7 acres of controlled rodents, conspicuously and generously studded with pretty bouquets of Erethizon epixanthum, (Porcupines) someone thought that the march to glory would be more impressive if arranged in lineal feet, presumably like elephants in the circus. Imagine the traffic rules and a funeral procession reaching probably from the Statue of Liberty to the Golden Gate -- and back again, with long feeders coming in from up toward Canada and down to Old Mexico! This and a lot of similar aberrations have helped to put us personally on a very much extended detour to the gates of St. Peter.

But "acres" still holds, and all the other "items" you see on Form 7 -- and no substitutes except by Act of Congress or Executive Order, of which we will be duly notified. --

J. H. Hatton

PULASKI MONUMENT PROPOSED

A monument to the late Ranger Edward C. Pulaski is the proposal of a group of C.C.C. enrollees in one of the Maryland camps. The boys have suggested that each enrollee in the C.C.C. be asked to chip in 10 pennies out of his monthly pay toward the erection of a suitable monument in commemoration of Pulaski's heroic work in saving the lives of a large crew of men in the 1910 fire. According to a letter from the camp superintendent to the Editor of "Happy Days", the Pulaski story made a profound impression on the boys when he told it in connection with a course in forestry he was conducting. In view of this reaction, it has been suggested that the Pulaski story might be useful in adding interest to forestry courses conducted in other C.C.C. camps. "Happy Days" is re-telling the story in its issue of February 3, and is planning to follow up the monument suggestion in later issues.

MORE EARLY FIRE!

"All the planters (South Carolina) keep great numbers of oxen, cows, and pigs, which procure their food easily, and without the least expense, in the large forests, which belong to the plantations. Horses are also frequently turned into the woods; but the true amateurs of horses, many of whom are found among the planters, send them rather to graze on a field, which the year before was sown with Indian corn and rice, and on which the species of grass, called crab grass, grows in great plenty. In woods, where the grass of the preceding year is not entirely consumed, and where this grass might stifle the new growth, it is burnt at the beginning of spring, and the young grass thrives better than it otherwise would do." - Duke de la Rocheforecault Liancourt, 1796.

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SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XVIII, No. 6 Washington, D. C. March 12, 1934

"THIS CASE IS CLOSED"

By J. A. Fitzwater, Washington

The words "This Case Is Closed" have been stamped on the Washington Office folders bearing the designation S-Sales, Sitgreaves, Cady Lumber Corporation, 1-1-24. This simple statement concludes the last chapter of one of the largest and most interesting timber sales ever made from the National Forests.

The original sale of 235 million feet made to the Apache Lumber Company was approved January 12, 1918. Concurrently with the advertisement of this tract the Indian Service advertised 400 million feet of similar timber from the Apache Indian Reservation; this tract also being purchased by the Apache Lumber Company. The tracts being adjacent made it possible for the same main line improvements to be used in serving both tracts. With sustained yield management strongly in mind, the Company established the town of Cooley, Arizona, and built a large sawmill and modern housing facilities for their workmen. They planned to house the woods help as well as the mill hands right in the town. The community idea has proved to be an interesting experiment and, while to date the original plan has been adhered to, it is probable that due to the long main line haul involved in the next sale some side camps will be necessary.

In 1924 the Cady Lumber Corporation purchased the interests of the Apache Lumber Company and took over the Forest Service and Indian Service timber sale agreements. The name of the town Cooley was at this time changed to McNary. In November 1925 as a result of the consolidation of a number of separate operations the name of the Company was changed to Cady Lumber Corporation. This Corporation is at present in a state of receivership with Mr. F. W. McQuatters, the President of the Corporation, acting as receiver, but its plans for refinancing is practically completed. Throughout the depression when most of the other lumber manufacturers in the Southwest were barely operating or entirely shut down, the Cady Lumber Corporation continued to operate on at least half time and so kept both their woods and mills crews sufficiently employed to prevent the disruption of any portion of their organization. This was no mere philanthropic gesture. While their men had been with them many years and were largely dependent upon the company for their existence, the company during this period at least made operating expenses.

The National Forest timber which was estimated to be 235,000 M feet (95 percent ponderosa pine) actually cut out 243,872 M feet with a value of $609,681. In spite of the various changes in the management and ownership, the original policies of both the Government and the initial purchaser have very largely been carried through to the completion of the sale. The result so far as the Forest Service is concerned, in addition to the financial return, is an area of some 55,000 acres of cutover land forested with a thrifty stand of ponderosa pine timber averaging 2,000 - 3,000 board feet per acre together with a satisfactory stocking of seedlings, saplings, and poles. The fire losses have been negligible. Very few boundary changes have been made and the company has complied religiously with the Forest Service contractual requirements. Region 3 is to be congratulated on the consistently good results which have been obtained on this sale. It has not been easy sailing with the ever present problems of financial difficulties, grazing, mistletoe, snow breakage, and ips.

In a letter to Regional Forester Pooler under date of September 28, 1933 Mr. McQuatters says:

"We have completed the cutting of all timber on the Sitgreaves Sale 1-1-24. The brush piling and snag cutting is finished. The brush will be burned when climatic conditions permit. Fences removed for logging are being rebuilt as rapidly as possible. We think the sale area is in very good shape. We therefore wish to take this opportunity to express our appreciation of the very businesslike manner in which your forces have handled all matters on which we have contacted them. Particularly do we wish you to convey to Mr. K. Carlisle, your chief lumberman on this sale, our sincere appreciation of his administration.

"The period of depression has brought many periods of worry to all of us. We have found that during the period in the past when we were running only half time or when sudden storms buried a limited log inventory under snow, Mr. Carlisle so distributed his crew that we were able to continue our limited operations economically. This fine spirit of cooperation was often rendered through personal sacrifices of both time and energy by Mr. Carlisle and his crew. We also particularly appreciate the gentlemanly manner in which Mr. Carlisle handled his crew. He did this so well that at no time have we had occasion to complain of any Forest Officer interfering with the woods crew employed by us. The division between where Forest Administration ceased and Company operations commenced has been so well defined by Mr. Carlisle that a truly remarkable result has been accomplished, especially if full consideration is given to the type of unskilled laborers we have often employed.

"We now have a pride in the demonstration of practical applied forestry shown by the condition of the cutover area. We have a crew of well trained men. We wish you to express to Mr. Carlisle our gratitude for the many hours of work over and above the duties called for by his official capacity which have resulted in this training of our crew. This crew is an asset to us and a credit to the Forest Service that such a result can be accomplished incidentally to regular Forest Administration."

The Company is now negotiating for two new tracts of timber on the Sitgreaves Forest and the Apache Indian Reservation estimated to contain 227 and 530 million feet, respectively. The opening up of these tracts will require the construction of much additional main line trackage which makes the venture a little dubious right at this time, but it is hoped that with the return of prosperity to the lumber industry the project may prove feasible. For the next year or so the Company can continue to fill its needs from the initial purchase from the Indian Service.

ARTICLE X AND MARKETS

By R. D. Garver, Forest Products Laboratory

June, 1934, probably will go down as an historic date in American forestry for, thereafter, all forest land cut over under the jurisdiction of the Lumber Code must be left in a condition favorable for regrowth. The success of this move, however, depends to a large degree upon satisfactory outlets for forest products. For some time the demand for lumber and timber products has been about as unsatisfactory as the woods practice under which they were cut. For this reason, plans to meet the forest problem will not be complete until a movement comparable in effect to that under Article X, is initiated to maintain and increase outlets for forest products. Sweden, Finland, and Germany excel in silvicultural practice, in part, at least because in the past there has been a satisfactory demand for their forest products. Recently, however, silvicultural practice and full land use are being severely hampered by a lack of markets in these countries. The United States is setting out to increase its acreage of productive forest lands and improve its silviculture; timberland owners must not allow their efforts in woods practice to be stultified by a serious lack of outlets for forest products. The public and private interests are interrelated in this problem in a broad social way and specifically the Government owns over one-third of the total timber supply for which a market is desirable. Therefore, a joint attack is the only sound approach. This requires, first, action to standardize and improve the quality of the products of the forest and place facts before consumers which will inform them about lumber and timber at least, to the extent that they are now being informed about competing materials, and second, research to improve the products, reduce manufacturing costs, increase utilization, and develop new uses for wood. This work is going on to a degree, but not on a scale to match the need for outlets for forest products that will develop under the provisions of Article X. The next logical step is to meet this requirement.

MACHINES AND MEN

By Roy Headley, Washington

In his book "The Industrial Discipline", Dr. Tugwell looks at industry and deplores, not the displacement of men by machines, but our faulty thinking and our faulty social organization which prevent machines from serving us as they might:

"The destiny of the machine seems so clearly that of performing all physical tasks that one who views their uneven development wonders inevitably why it is that they have not more rapidly come into their own. Puzzling over this is likely to bring us to the point of trying to formulate a rule of machine advance. Such a rule would, perhaps, run something as follows: Machines follow the analysis of work to be done at a rate determined by (1) the incidence of invention (2) the prospect of reducing costs (3) the spread of information concerning them (4) the inertia of even informed minds, and (5) the opposition of vested interests. We have put job analysis first, as Adam Smith did when he said that the division of labor precedes machine application."

One might think that Dr. Tugwell was writing about forest work instead of industry. It required decades for us to get far enough with our analysis of fire fighting, for example, to realize that the concept of fire fighting as gallant battling of the flames was the result of amateursh thinking. It took many years of job analysis (if one could call it that) for us to realize that while handling large bodies of men in a big way was flattering to our egos, it alone did not stop the fires; and that when analyzed, the job of fire fighting included elements which machines could do better, faster, and cheaper than men.

And then when we had analyzed a bit and the machines had been invented or adopted, Dr. Tugwell's "inertia of even informed minds" got us down. Strict accuracy would perhaps compel one to add that this inertia still has us down in places, even if we are struggling against it.

We perhaps did better in analyzing our road building job. And having developed our marvelous tractor trailbuilder and hay rake ripper, no one can find fault with the "incidence of our invention." But here again, the inertia of even informed minds plagues us.

Not that we do not use road machines. There is endless pressure to buy more and more of them and they are all used - part of the time at least; but our response to emergency needs for using our machines has shown considerable inertia. Emergency conditions have flooded us with hand workers and thrown us off balance in the use of machines as against hand labor. We can not hope to buy enough machines to balance our supply of hand workers if the machines are to be used for only the conventional eight hours per day or even for the full daylight hours. To be sure, continuous 24 hour use of our machines would require some invention, some adaptation and some inconvenience. Twenty-four hour use of the machines would probably be unwise under normal financial conditions. But conditions are not normal and 24 hour use of machines would get us thousands of miles of roads we need and may not get unless we get them from present opportunities.

If the urge to invent, to find a way, which we often exhibit should be brought to bear on night work with our precious machines, it is a safe bet that before spring, every machine we own would be equipped with some kind of lighting facilities and a road machine sitting idle on the job under the starlight would, during the season of 1933, constitute an unquestioned reason for immediate "change of management". Before approving the purchase of any more road machines the authorities may want to know why full use is not being made of the machines already on hand.

PRESIDENT'S COMMITTEE ON WILD LIFE SUBMITS REPORT

After several weeks of deliberation, the President's Committee on Wild Life submitted a report to the Secretary of Agriculture on February 8. The Committee consists of Thomas H. Beck, Wilton, Conn., Chairman; Jay N. Darling, Des Moines, Iowa; and Aldo Leopold, Madison, Wis. The report is a well written, brief, and logically presented statement on the large and complicated question of conservation of wild life. It is divided into five sections: (1) Migratory Waterfowl, (2) Upland Game, (3) Song, Insectivorous and Ornamental Birds, (4) Mammals, and (5) Administration and Staff.

The Committee recommends:

1. The immediate acquisition of 4 million acres potentially or actually suitable for migratory waterfowl and shore bird breeding and nesting grounds.

To insure immediate possession and control and still provide time for careful surveys, proper selection and construction work, we suggest one year leases (5 percent of purchase price) with option to buy at an agreed price any time during the lease period.

Areas thus acquired to be inviolate.

2. The purchase of 5 million acres of sub-marginal land suitable for development and management as upland game areas.

At such time as the game population of these areas becomes sufficient, the surplus may be used for stocking other areas, or regulated shooting under State supervision may be permitted by the granting of trespass rights.

The acreage for upland game should be extended to include at least 10 million acres, as rapidly as suitable tracts are found for withdrawal from unprofitable agricultural production.

3. The purchase of at least one million acres of areas known to be used as breeding and nesting places and rookeries by such species of song, insectivorous, ornamental and non-game birds as are becomming scarce and of which sufficient seed stock still remains.

4. (A) Acquisition of 2 million acres needed for the restoration of big game, fur bearers and other valuable mammals. This should include the purchase of outlying farms or ranches where grazing privileges interfere with the protection of wild life ranges, and depletes the soil conditions.

(B) The withdrawal of grazing privileges on extensive tracts of public domain and in the national parks and forests where the acreage necessary to graze a head is too great to permit of any profit, and the repurchase of the water rights in such areas.

(C) The taking of title, by the Government, to all reversion land in the public domain and its retention for the restoration of wild life and improvement of soil conditions.

5. That Subsistence Farm Homes in sufficient numbers be established on all areas acquired, the farmers to serve as caretakers and maintenance men under the direction of trained district supervisors. Farmers with satisfactory housing now reside on most of the areas and will be available for this work.

Subsistence maintenance cost for the first year should be provided out of emergency funds and thereafter from the following sources:

(a) Duck Stamp revenue;
(b) Part of the funds to be made available under the Migratory Bird Conservation Act;
(c) The proposed tax on arms and ammunition already agreed to by the parties interested;
(d) Appropriations of public funds, such as are made for forests and parks.

6. For Presidential approval, a new coordinated and comprehensive administrative set-up, including the creation of a Wild Life Division out of existing personnel, and the appointment of a Director competent for the execution of this program of national wild life restoration and future conservation.

7. That if the conclusions set forth in the above paragraphs prove to be justified by the analysis of the facts hereinafter stated, that $500,000 be immediately allocated by the CWA for the work of technical examination of the areas listed, for the purpose of securing data not now available upon which final approval of taking title must depend.

8. The "ear marking" and use of $25,000,000 to start the acquisition program by the purchase of areas scheduled to such an extent as the above sum will cover.

9. And finally, that $25,000,000 of PWA and CWA moneys be allotted for restoration and improvement of the land acquired. Definite improvement projects to be submitted in the prescribed manner.

This work includes:

A. Construction of dams and dikes;
B. Fencing and ditching;
C. Excavation and blasting;
D. Food planting and land clearing, etc.

Of special interest to the Service is the recommendation on the purchase of outlying farms or ranches of a submarginal character which may interfere with wild life restoration. In describing such ranches the Committee refers to (1) those on public domain where the grazing permit has been reduced to a minimum, but where grazing still interferes with some valuable big game herd, such as mountain sheep, antelope, or elk; (2) a grazing ranch headquarters located on a bear range, where bear commit occasional depredations and have in the past been subjected to trapping or poisoning, but where the real remedy is to buy the ranch and let the bears have the range; (3) outlying farm properties serving as a base for poachers, market-hunters, or other illegal damage to valuable game herds; (4) an outlying farm now a source of damage claims by reason of beaver colonies, elk herds, or other mammals using nearby range; (5) an outlying sheep ranch liable to transmit scabies to mountain sheep; (6) outlying ranches which, by fencing or diversion of natural waters, could be retired to the advantage of wild life.

The Forest Service has laid before the Committee two proposals for purchasing land in the Jackson Hole Valley and along the Yellowstone River north of the Yellowstone Park in the interest of the elk herds.

The recommendations of the Committee were somewhat anticipated and a circular requiring certain data on game ranges had been prepared and forwarded to the Regions before receipt of the report. Copies of the report have been sent to each Regional Forester.

FOREST SERVICE STUDY MOVES INTO CEMETERY

A cemetery is to be the scene of a new research project of the Forest Service, under the terms of a lease just approved.

The Intermountain Forest and Range Experiment Station has leased a plot of approximately one acre from the Union Cemetery Association of North Ogden, Utah, on which to conduct a study of the growth and composition of protected native vegetation as compared with similar grazed vegetation. The area has been protected against grazing for the last 65 years, and, according to the Experiment Station, "It's the only place you can find natural soil and plant conditions thereabouts."

The Forest Service gave assurance that its investigations would be confined to above the surface of the ground.

YE EDITOR DISCOVERS

At its meeting on February 21, the National Forest Reservation Commission approved land purchases aggregating 377.302 acres. The land consists mostly of small tracts of timberland and is all in States east of the Great Plains. The largest addition approved is 74,374 acres in the Monongahela National Forest, most of which lies in West Virginia. Other large additions include 49,998 acres to the Wambaw unit on the coast of South Carolina, and 37,296 acres to the Ouachita National Forest in Arkansas and Oklahoma. Three National Forests and Purchase Units in Minnesota were increased by 39,846 acres, six in Wisconsin by 35,858 acres, and five in Michigan by 31,388 acres.

These recent approvals, together with 812,372 acres approved at the Commission's meeting on January 11, make a total of 1,189,674 acres passed by the Commission since January 1 and brings over 3 million new acres under the acquisition program inaugurated last spring.

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The Forester recently designated as a Primitive Area the wild ,rugged Sun River area within the Lewis and Clark National Forest, Montana. Extending from and lying immediately east of the Continental Divide, this new Primitive Area covers 240,000 acres of land on Sun River, a tributary of the Missouri. Within its boundaries are stupendous limestone peaks, reefs, and precipices, including the famous "Chinese Wall" which, with a sheer drop of more than 1,000 feet, extends for 15 miles with only one place where it can be crossed. Literally honeycombed with game trails which were well known to Indians long before the advent of white men, this area is also the home of the Sun River elk herd, third largest in the United States. There are more than 3,000 elk in the present Sun River herd, despite the fact that winter range is still a serious problem.

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At the recent meeting of Regional Foresters it was agreed that it would be very desirable to hold a field conference on grazing matters this spring. Accordingly, it is proposed to hold such a conference during the latter part of April or the first part of May at Ogden, Utah.

The purpose of the meeting is to consider the general grazing situation and to determine what adjustments should be made in connection with the new ten-year program beginning in 1935. It is contemplated that a thorough discussion will be had of all important administrative and management phases of the grazing work. Each Region will be expected to finance the members it designates to attend. It is regretted that the attendance must be confined to the grazing personnel and such Regional officers as the Regional Foresters may designate. This is necessary because of expense and inadequate facilities for handling a larger group. A definite program for the meeting will be submitted at an early date for consideration by the Regional Foresters.

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A study of the turpentine belt by the Southern Forest Experiment Station is resulting in some surprising data. Thus, the field crew reporting on 29 naval stores operations, showed 11 operators as carrying on thinning and planting work on their properties. The area thinned amounted to 3,173 acres, the area planted aggregated 980 acres.

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Effective March 15, Assistant Regional Forester B. F. Heintzleman is being transferred from the Region 8 organization to the Washington Office to head up the Lumber Code Enforcement work of the Service in the States. Plans for development of the Code enforcement organization are taking shape all over the Service. Detailed estimates for this work covering the large territory within the jurisdiction of Region 7 have been prepared and similar estimates are to be collected by Assistant Forester Headley when he visits Regional Offices to confer on allotment problems.

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Forest Supervisor Robert E. Clark of the Rio Grande National Forest in Colorado has been on detail in Washington for a couple of months devoting his time first to the rating of Conservationists Examination papers for the Civil Service Commission and later to the troublesome task of writing job specifications incident to the correlation of emergency pay rates called for by the Executive Order of November 18. He is now assigned to the ECW Form 7 statistical job to which Mr. Hatton has devoted days, nights, and Sundays since last fall.

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With Regional Forester Charles Flory of Alaska making one of his usual winter visits to Washington, Assistant Regional Forester Merritt on detail for several months, Miss Henrietta Sell from the Regional Office working temporarilly in the Atlantic Building, and Assistant Regional Forester Heintzleman on his way to Washington, the indications are that the Territory will be well and ably represented in the National Capital.

Merritt has been assigned the job of correlating the pay of employees from our various employment funds. Various good men have worked on this job since the Executive Order was issued on the 18th of November. Because the pay cut and the Comptroller, as well as pay correlation, are involved in the matter, it is becoming steadily more controversial and Merritt is up against a tough problem.

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The Board of Public Works has approved the construction of a $75,000 warehouse at Portland, Oregon, for fire equipment and general purposes.

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"Uncle Sam's Forest Rangers" returned to the ether waves on March 9. On that day the National Farm & Home Hour program carried the first episode of the new series. Rangers "Jim" and "Jerry" returned to the Pine Cone Ranger Station from their winter assignments to distant C.C.C. camps and will again take up the routine of District Ranger and Assistant Ranger, respectively. Thereafter, the episodes will appear weekly on the Friday program on the National network. The program was also resumed on the Western network Thursday, March 8.

COMPARISON OF NIRA ALLOTMENTS, MEN REPORTED AT WORK FEBRUARY 26 AND TOTAL MAN WEEKS OF EMPLOYMENT REPORTED TO FEBRUARY 26.

Region	Men reported Feb. 26	Total man weeks of work reported to Feb. 26		Present net allotment
		Number	Percent	Percent
1	111	16,917	5.9	15.0
2	706	28,656	10.0	4.4
3	1,294	37,221	12.9	8.7
4	113	23,750	8.3	7.3
5	3,099	35,232	12.2	21.0
6	410	36,182	12.6	12.0
7	2,117	36,809	12.8	13.3
8	27	500	.2	.3
9	2,409	62,595	21.7	9.9
*Research	332	8,156	2.8	7.0
Biol. Survey	86	1,843	.6	1.1
Total	10,704	287,861	100.0	100.0

*Does not include employments in Washington office

PAUL REDINGTON RETURNS TO FOREST SERVICE

Effective March 1, Paul G. Redington, one of the "Old Guard" in the Service, is being transferred back to the organization in which he served in so many capacities for many years. His first assignment will be as special assistant in the Branch of Public Relations.

Mr. Redington left the Forest Service on February 16, 1927, to become Associate Chief of the Biological Survey. On the retirement of Dr. E. W. Nelson from administrative duties on May 9, 1927, Mr. Redington succeeded him as Chief of the Bureau, which position he is leaving to re-enter the Forest Service.

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

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>
> Theodore Roosevelt

Vol. XVIII No. 7 Washington, D. C. March 26, 1934

A PLODDING FORESTER PLODS

By James B. Beals, Rio Grande

Whuff! And does he say things, this editor of the Milwaukee Journal? But just like most editors, he seems to be mighty handy with discussion of intangible and abstract ideas. In fact, about the only definite statements I find in his defamatory reply to a letter, presumably from the Chief's office in Washington, are his references to the magnificence and magnitude (both good words) of the work Federal foresters have been and are accomplishing. Whoa! There is another definite statement. It is, "Hard work alone never wins a proper reward." Even this statement becomes somewhat murky when an attempt is made to evaluate that word "proper". You know, proper is just one of the many words a feller falls back on when he tries to define something of which he has but a hazy conception.

As near as this old hard-head ranger can make out from the Journal editor's remarks, Federal foresters have not yet taken their proper (there's that word again) place in the estimation of the people because of an inferiority complex which the foresters have been unable to outgrow. Well, I've been accused of several reprehensible traits by disgruntled forest users, but I believe this is the first time the accuser has resorted to Freudian profanity. And, after giving the matter a little thought, I've come to the conclusion that although there may be some justification for the gradual development of such a complex on our part, I doubt very much that it has actually taken hold.

For example, I received my first eye-opener in this respect a few weeks ago upon my first and only visit to a C.C.C. camp, where the miles of plumbing, huge piles of coal, numerous barracks, ten-car garage, filling station, cellar, bake shop, blacksmith shop, recreation hall, bath house, hospital, etc., almost staggered me. The same day I visited with the Ranger in charge of the district on which this camp is situated, at his station a few miles from the camp. Boy! Did I feel at home in his little four-room log station, where we carried the water in buckets from the spring, warmed ourselves by the big airtight heater stoked with wood cut by the Ranger himself, dined on simple but mighty toothsome grub, discussed the welfare of our respective districts, and metaphorically patted each other on the back for good worthwhile accomplishment economically achieved.

Really, I think what gripes the complaining editor is his belief that we, as a class, are a little lacking in the typically American attribute of telling the world how good we are. He admits we are good at what the profession stands for, but he decries the lack of hooey in our daily attitudes, which thereby has deprived us of our proper place in society.

He admits we deserve a good seat, but before we attain it we'll just have to brush up on hooey and its diversified uses.

Now, we foresters, especially we Rangers back in the brush, do not have many opportunities for mingling with society in its broad aspect, whatever that means. Our society is made up of all the people in the community; society in its narrow aspect, as it were. We mingle freely and on common footing with timber operators and their employees, with sometimes wealthy but not always cultured recreationists, with stockmen, farmers, merchants, cowboys, sheep herders, and with inn keepers, dude wranglers, outlaws and sheriffs, attorneys and judges, bankers and borrowers. Our society is of all ranks of occupation, culture, and wealth. I've always fancied I stood pretty high in society, as I know it, but perhaps if someone will instruct me in the efficient use of hooey I can then take my place as a leader among the sheep herders.

Seriously, I believe you will find it true that Federal foresters have as many personal friends among men and women of high rank in all walks of life as has any other group of professional men in public service. Surely friendship does not come from such people unaccompanied by respect. Among my pleasant memories is the sight of a Federal forester of rather low rank (ranger) being enthusiastically greeted in friendship by a U. S. District Attorney of unblemished record, the attorney interrupting a session of court to greet his friend the forester. Among my unpleasant memories is that of a young Federal forester sighing for another opportunity to wear his tuxedo.

So, perhaps by "society" the Journal editor means that superficial group distinguished by such fetishes as soup and fish, enameled finger nails, and polo-rum-dog conversation. If that's what he has in mind, then thank Heavens we have what he calls an inferiority complex; and long may it wave.

Truly, a distinctive uniform has been lacking, but I particularly wish to challenge the statement that foresters are proud of their nondescript khakies and disheveled appearance. Neither are they proud of their ramshackle quarters, and there are plenty of this sort. But, by George, we are proud of being able to get the work done efficiently and economically, whatever it is and whenever it arises. And, if it's work requiring nondescript clothing and a temporarily disheveled appearance, what the Hell; get her done and done right. I seem to remember wearing fatigue clothes in Uncle Sam's Army without loss of rank, and I cannot remember ever having experienced loss of any social standing by being caught in nondescript clothing and a disheveled appearance, because I've never been caught in that fix when the public work did not justify my appearance.

Not with any sort of uniform will Federal foresters enhance to any great extent the respect which they have attained largely through the performance of good work and the living of decent lives.

WHERE WE STAND ON RADIO IN REGION ONE

By L. C. Stockdale, R. 1

At the present time we have 59 sets in the Region, including 7 P sets, which are now obsolete or practically so. Radio service was depended upon last season for practically all communication on one ranger district of the St. Joe and for about one-half of a district on the Coeur d'Alene. In addition, radio was used for communication in planting camps last spring and fall, for regular service between Savenac, Priest River, and Missoula; on the Clearwater for service between Orofino, Pierce, and Cedars Ranger Station; and three batteries of sets were held in reserve for suppression service. For these three batteries

(1 SP and 3 PF's per battery) operating crews composed of "ham" operators were organized and trained. Due to the vagaries of fire occurrence, these batteries were not called to service last season.

Right now, radio is in use between Savenac, Priest River, Missoula; for C.C.C camp service on the St. Joe; for Orofino-Pierce service on the Clearwater; for game patrolman service on the Flathead; and for isolated ranger district service (one each) on the Lolo and Coeur d'Alene.

So much for what we have done and are doing. The question of why we have not done more during the past two seasons is still unanswered. But here is the answer: We have thought best "to make haste slowly" for three reasons which to us seem sound:

1. The need for familiarizing ourselves, through use of a reasonable number of sets, with the practicable possibilities which radio service offers to this Region.

Possibly we should have taken the opinions of radio enthusiasts for this but our thought was to the contrary, and our present conclusions as to practicable scope of use in the Region fall short of the scope which others propose.

We see the following possibilities of effective use:

(a) For regular communication service to guard camps in territory undeveloped by telephone systems (we have several such areas).

(b) For regular communication to road, trail, fire and other camps remote from existing telephone lines.

(c) For inter-district communication in areas where atmospheric conditions interfere materially with telephone service.

(d) For emergency guard communication at points where a considerable investment would be required to establish telephone service.

We do not consider radio (at present) as being a practicable tool for a fireman to carry with him into the woods; nor do we consider it as good business to "go radio" at either regularly occupied points where a small investment will provide telephone service or at emergency points so located with respect to telephone-equipped points that the radio point would be an "outlander".

Within the limits above outlined we expect, eventually, to "go radio", but we have planned to grow into it (as we have been doing) rather than jump in more or less (and in our case "more") blindly.

2. The need for "selling the idea" to the Forests.

It has seemed to us unwise to attempt to "high pressure" radio use on our Forests. Aside from the view that high pressuring is poor long-time salesmanship, our reasons were that we felt that the best practice was to proceed gradually, working radio in where it was clearly evident that such service was economical and would suffice; let it prove its value through actual use, and through experience in use; and, through dissemination of information from users to neighbors, develop an ever-widening circle of real interest in radio possibilities. Starting on the St. Joe in 1932, we now have radio in regular use, on the basis of "asked for" service, on the St. Joe, Clearwater, Coeur d'Alene, Lolo, and Flathead. Next season will see a considerable increase in use on these Forests, and some extension of use to other Forests.

3. Lack of assurance as to permanency of current radio developments.

We have been canny, and deliberately so, about making any large investment in radio equipment. This is for the reason that we have not felt and do not now feel that all of the "bugs" are out of radio or that the sets advocated for use in 1933 will be the best available in 1934. We are not thinking in terms of "new car" improvements in this, but rather in terms of "buggy versus car". Our justification for such thought? The fact that Type P of 1932 (a voice one-way set) was scrapped in 1933 by (PF) a light-weight voice both-way set, that Type SP was supplanted in 1933 for certain services by Type M, and that the desirability of Type SP for certain uses is now being further threatened by a new high-frequency set that holds forth much promise.

How can one be other than canny in the light of such knowledge? Not only are long chances to be taken on having a lot of obsolescent equipment on hand, but with such radical steps-ups in service ability as the newer sets produce, it has not been possible to plan intelligently for radio distribution and use. The service deemed impossible today becomes a possibility tomorrow, and a certainty by the following morning. In view of this rapidly-changing situation, we preferred to proceed with caution, stay on sure ground, and let radio shake itself down somewhat more before making considerable investments in such equipment.

As a policy, we plan now on very little iron wire construction to emergency guard stations, a concurrently diminishing use of emergency wire and telephones and an increasing use of radio for all emergency uses, the equipping of certain Supervisor and Ranger headquarters with M sets for regular service, extension of use of the SP unit (or the new high-frequency set) to regular lookout, and fireman service at several more points than are now so handled.

To accomplish such a program with satisfactory assurance that the plan is basically sound requires quite sure knowledge as to the limitations of use of the instruments upon which the plan rests. It requires also time to develop carefully a plan that weighs the relative costs of radio and telephone service and makes the most of radio within the limitations of ability to give service and compete for the furnishing of this service against the costs of telephone service.

With certain knowledge that the scope of radio effectiveness was rapidly broadening, it has seemed wise to refrain for a time from extensive plan development, and instead to keep step with progress, get men radio-minded, and lay a foundation for sound plan development by seeking out and studying the administrative effects of the weaknesses which are inherent to radio service. The advent of Impnira and the consequent speeding up of the Forest Development program has, sooner than we thought desirable, brought us face to face with the problem of developing a quite positive plan for correlating radio and telephone service, and proceeding extensively with developments along both lines. We are, however, much better prepared now to proceed with such planning than we were two years ago.

DOUGLAS FIR LOG PRICES: 1900-1933

By E. F. Rapraeger, Pacific Northwest For. Expt. Sta.

In the Douglas fir region are five principal log markets where logger and millman meet to bargain for the timber after it has been scaled and graded. The price that they agree upon for logs on grade is a fairly reliable index of the market value for similar timber. The leading log market is the one on Puget Sound where a scaling and grading association has maintained a continuous existence under one name or another since 1899.

Since 1900 the long-term movement in log prices on Puget Sound has been upward, which substantiates the maxim of old-time lumbermen who say,"The price of timber tends to rise and though it may remain steady for a time it seldom declines." The upward price movement has not always been gradual and steadily sustained. It has been interrupted by sharp upward surges lasting one to three years, rapid, downward sweeps usually of short duration, and a variety of intermediate movements. During the current depression the price of No. 2 Douglas fir logs (a representative grade) dropped from $18 per M late in 1930 to $11 per M in the spring of 1933. A part of the decline has since been recovered and the present price is $14. The highest price ever paid for No. 2 fir logs was $24 per M during the post-war expansion in 1920. The lowest price since 1900 was $5.40 per M in 1901. The general price movement since 1900 for No. 2 Douglas fir logs is shown in the following compilation.

Period	Character of price movement	Price at beginning of period	Price at end of period
		$ per M	$ per M
1900-1905	Gradually upward; erratic	5.75	7.00
1906-1907	Rapid upward surge	7.00	12.00
Aug. 1907-Oct. 1908	Rapidly downward	12.00	8.00
1909-1916	Prices steady; little change	9.00	9.00
1917-Nov. 1920	Sharp upward sweep	9.00	24.00
Nov. 1920-Jan. 1921	Very sharp decline	24.00	16.00
1922-1930	Prices steady	18.00	18.00
1931-Mar. 1933	Slowly downward	18.00	11.00
Mar. 1933-Dec. 1933	Upward	11.00	14.00

Many of the fluctuations in log prices since 1900 were caused by changes in the purchasing power of money. When prices are expressed in dollars of constant purchasing power, like the "wholesale commodity" dollar, many of the peaks and dips from prosperity to depression periods are eliminated. In terms of the wholesale dollar, the average rate of increase in the price of No. 2 Douglas fir logs from 1900 to 1933 was about 30 cents per thousand board feet per year. There is reason to believe that this increase will continue for some time into the future.

REGION FOUR'S NEW HOME

Outstanding in beauty, in arrangement of office and storage space, lighting effects, and in comfort the new four story Forest Service building at Ogden now houses the Regional Office and Intermountain Forest and Range Experiment Station.

The features: 80 office rooms; ample storage space; assembly room; library; air conditioning; two elevators, passenger and freight; floors of oak in offices and rubber tile in hall; lobby finished in golden travertine Utah marble; entrance of terra cotta with white bronze doors; furnace - gas fired but convertible to coal burning unit; heating of vacuum type and steam; outside of building is gray granite base with fire brick and terra cotta walls toned from brown to light tan; building rests on creosoted piling; ground dimensions 105 x 105 feet; floor area 53,570 square feet. Location is one block east from Hotel Ben Lomond at 25th Street and Adams Avenue. This artistic structure has drawn the admiration of the public. On the day it was opened 3000 visitors went through it from basement to greenhouse on the roof.

For many years the old quarters have been inadequate. Now the Regional Forester can well be proud of the years of good licks he has delivered in behalf of suitable quarters. The building now houses the following:

	Regular Employees	Temporary
Regional Office	49	23
Intermountain Forest & Range Experiment Station	21	25

(From Region 4)

YE EDITOR DISCOVERS

At its meeting of February 21, the National Forest Reservation Commission was advised that lands within existing purchase units were not being offered to the United States by the owners as rapidly as had been anticipated or was desirable. Apparently this is due to a certain price resistance on the part of the land owners, inspired in part by a feeling that since the "New Deal" has increased commodity prices under its program it should be willing to pay increased prices for lands desired for National Forest purposes. In still other cases uncertainty as to the future value of the dollar seems to have been a factor. There is also a class who conclude that their lands are essential to the fruition of the Government's program and that they therefore are in a position to demand prices in excess of those they could expect to receive from any other possible purchaser.

Due to these causes, the Commission was told that three possible courses of action were open. The first would be a policy of watchful waiting, pending the time when the land owners were more disposed to accept the values which the Forest Service felt it could recommend. However, this course is made difficult by the fact that the funds now available for purchase will cease to be available on June 15, 1935.

A second means of meeting the situation would be to increase present price levels, perhaps as much as 50 percent. This the Forest Service is reluctant to recommend since present commercial values and prospective trends do not indicate the probability of higher future values.

The third course of action would be to widen the field of purchase by enlarging existing units and establishing new units, it being known that there are many parts of the East in which large acreages freely would be offered at the prices now being paid by the United States.

The members of the Commission, without dissent, indicated their willingness to consider this third course. A special Cabinet meeting precluded presentation of any new units or additions at the meeting of February 21, but the members of the Commission made it clear that they would be willing to meet and pass upon such a program as soon as it had been placed in their hands by the Forest Service and could receive their consideration.

A program proposing the creation of thirteen new purchase units and the substantial enlargement of thirteen existing units has now been placed in the hands of the members of the Commission. If these proposals are all approved the gross area of the purchase units will be increased by more than 7 million acres and the purchasable area within the purchase units by almost 6 million acres. The estimated total cost of acquisition is approximately 23 million dollars. A formal meeting of the Commission to pass upon this program is now being planned for the week beginning March 26. At this meeting there also will be presented all purchase cases within existing units which are in readiness for consideration.

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In order to coordinate all phases of land use planning, subsistence homesteads, etc. as they relate to the work of the Department of Agriculture, the Secretary of Agriculture has charged Mr. H. R. Tolley, Chief Economist of the Agricultural Adjustment Administration, with responsibility for heading up the work and has made arrangements under which each Bureau of the Department will detail certain of its members to work on the project under Mr. Tolley's general direction. At present the persons thus detailed will perform their new duties largely in their own offices, but as the work progresses some kind of emergency organization, created by temporary details, may become necessary. As representatives of the Forest Service the Acting Forester has designated L. F. Kneipp and R. E. Marsh of the Washington Office. The Acting Forester has also suggested to Mr. Tolley that the contribution of the Forest Service in relation to specific projects or to questions of a technical character can be made most effective by assigning particular jobs to the best qualified men in the Regional organization or the Forest Experiment Station organization within whose territory the particular project is located, rather than by detailing one or several of the Forest Service personnel to specialize within their fields throughout the whole wide range of the land use program.

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Tentative allocations of CCC Camps for the third period of enrollment have been completed. There will be a total of 1468 camps of all classifications - the same number as in the last enrollment period - of which 398 will be relocated. Camps on the National Forests will number 431, State Forests 296, Private Forests 162, Erosion Camps 122, National Parks 100, State Parks 271, 23 under the Soil Erosion Service, and 63 under miscellaneous Federal classifications, including the Bureau of Animal Industry, Tennessee Valley Authority, Biological Survey, Reclamation Service, General Land Office, and Army Engineers.

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A series of five radio addresses on forestry is now under way on the coast to coast network of the National Broadcasting Company in connection with the conservation series of the National Farm and Home Hour. The first talk "Our Forest Resources" was given on March 16 by R. E. Marsh of the Washington Office. On March 23, H. N. Wheeler spoke on "The National Forests" and E. N. Munns on "Water Conservation." L. F. Kneipp is to speak on the subject of "Forests and Recreation" on Friday, March 30, and Ovid Butler of the American Forestry Association will speak on "New Developments in Forestry" on Friday, April 6.

By special arrangement, the first half of the NBC's Friday Conservation period on the National Farm and Home Hour, which ordinarily goes out only over the Eastern network, is being carried to the West Coast stations of the NBC.

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Jay N. Darling ("Ding") of Des Moines, Iowa, was recently appointed Chief of the Bureau of Biological Survey by Secretary Wallace. Since January 6, 1934, Mr. Darling has served as a member of the President's Committee on Wild Life Restoration, of which Thomas H. Beck is Chairman and Aldo Leopold a member. While Mr. Darling is best known for his world-famous cartoons, the Secretary stated, he is also recognized as a leader in wild life conservation and restoration activities, a field to which he has devoted many years of his life. He is a member of the Migratory Bird Conservation Commission of the U. S. Department of Agriculture, of the Iowa Fish and Game Commission, of the Iowa Planning Commission, and of the Des Moines Park Board.

BISHOP MUSEUM GIVES RARE WOOD SPECIMENS TO YALE

The Bernice Pauahi Bishop Museum, Honolulu, T. H., has recently donated to the Yale School of Forestry over 2500 different wood specimens from the islands of the South Seas. This is the largest single addition ever made to the Yale collections and brings the total number of catalogued samples to nearly 26,600.

"The object of the gift," says Professor Samuel J. Record, "is to further a comprehensive systematic study of the woods of the entire world which is being sponsored by Yale University in cooperation with the International Association of Wood Anatomists. The Bishop Museum specimens are of exceptional value because nearly all of them were obtained by scientists on expeditions to remote localities in the Pacific, for example, Fiji and Samoa, and Austral, Cook, Hoorn, Lauai, Line, Marquesas, Maui, Phoenix, Rapa, Raratea, Society, Tubuai, and Wake Islands. The material will be of great assistance not only in the general classification of woody plants, but also in identifying and tracing the source of old wooden implements found on the Islands, thereby helping to clear up some of the problems concerning the origin and early activities of Polynesian peoples."

EFFECT OF FIRE IN SECOND-GROWTH LONGLEAF AND SLASH PINE VARIES WIDELY UNDER DIFFERENT CONDITIONS

Recent studies of fire damage in even-aged second-growth longleaf pine on the Osceola National Forest, Florida, have determined the extent of the close relationship between size of the trees and the killing effects of fire. One study was made of a severe fire that occurred during the dry period in the spring of 1932 following three years of protection. For every inch increase in diameter in trees between 1" and 8" d.b.h. an average decrease of 16 percent in the number of trees killed was found. For the trees in the 2" diameter class, mortality was 100 percent; for the 4" trees, 54 percent; for the 6" trees, 22 percent; and for the 8" trees, 0 percent.

The same data showed the extent of the similar close relationship between crown class and mortality. For the stand as a whole, 90 percent mortality occurred in the suppressed trees; 57 percent in the intermediate; 24 percent in the codominant; and only 7 percent in the dominant class.

In uneven-aged stands in the Southeast, studies indicated that longleaf trees over 2" in diameter are not generally killed except by fires severe enough to kill at least 20 percent of the stand; and that trees over 4" in diameter breast high are not killed except by fires severe enough to kill at least 40 percent of the stand. In fires of greater severity, mortality occurs in all diameter classes. - From Forestry Notes, Southern For. Expt. Sta.

EXTRA COPIES OF AGRICULTURAL RESEARCH JOURNAL AVAILABLE

The Journal of Agricultural Research has on hand extra copies of the Journal, which it will be glad to furnish to anyone desiring to complete his files of this publication. A list of the issues for which copies are available follow:

Vol. 2, No. 1
Vol. 3, Nos. 2, 4, 6.
Vol. 5. Nos. 3, 19, 20.
Vol. 6. Nos. 4, 25.
Vol. 7. No. 13.
Vol. 9. No. 6.
Vol. 11. No. 1.
Vol. 14. Nos. 6, 14.
Vol. 18. No. 10.
Vol. 19. No. 12.
Vol. 25. No. 1.
Vol. 26. No. 3.
Vol. 35. No. 13.
Vol. 36. Nos. 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13.
Vol. 37, Nos. 1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13.
Vol. 38, Nos. 1 to 13, incl.
Vol. 39, Nos. 1 to 13, incl.
Vol. 40. Nos. 1 to 13, incl.
Vol. 41, Nos. 1 to 13, incl.
Vol. 42. Nos. 1 to 13, incl.
Vol. 43. Nos. 1 to 13, incl.
Vol. 44. Nos. 1 to 13, incl.
Vol. 45. Nos. 1 to 12, incl.
Vol. 46. Nos. 1 to 12, incl. Index.
Vol. 47, Nos. 1 to 9. incl.

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SERVICE BULLETIN

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> Theodore Roosevelt

Vol. XVIII No. 8. Washington, D. C. April 9, 1934

FOR A NEW DEAL IN UNIFORMS

By P. A. Thompson, Willamette

For many years I've been an interested reader of Bulletin articles anent the uniform and service stripes or insignia of one sort or another. Reams have been written concerning it - friends have fought about it - orders have been issued (and sometimes ignored) and we are just about where we were fifteen years ago. Some wear it and some don't; some wear one part of it and some wear another part of it; and it is still impossible to tell a taxi driver or laundry wagon driver from a Forest Officer unless you can sidle around and see him from the front where he ought to wear his badge - but may not wear it.

This may illustrate.-- Last summer I met a friend of fifteen years standing whom I hadn't seen for ten or twelve years. In the meantime he had married. Of course, I had to go up to the house and meet his wife and family. All dressed up in my forestry uniform, and it so happened it was all on and in place, I walked into his parlor to meet the wife. Says he "Dear, this is Perry Thompson of whom you've heard me speak so much." Says she, (after a quick glance at my getup) "Oh yes, I remember - you're a speed cop aren't you Mr. Thompson." Thank heaven I've a sense of humor and could really laugh - but was his face red?

In every town in Oregon today one sees Forest Rangers, E.C.W. foremen, superintendents, "cat" drivers, mechanics, and even some enrolled men on leave who look the part and dress the part -- often better than we. Our present uniform doesn't mean anything to anyone any more. We all know it. Now I've a lot of pride in our regular organization. I'm proud and glad to be one of it. It hurts me to see a tipsy road foreman or a rowdy temporary laborer taken for a Forest Ranger-- and it's done every day in a thousand places.

Isn't it time we took cognizance of this situation? Five years ago I would have voted against proposals to wear insignia and a hard boiled order to wear the uniform at all times when on duty. But times have changed and so have my ideas. We need a distinctive uniform with distinctive insignia and need it now. We need one for office and one for field with practically no "optional" garments.

Will John D. Guthrie and other proponents of a real uniform please start something? I believe the iron is hot.

USE OF RADIO IN FIRE CONTROL 1932-1933 ON CHELAN FOREST

(From a Report by P. T. Harris, Chelan)

SP 18 was taken to the Clark Creek fire with the first reinforcements. It was known by the officer in charge of this crew that the second reinforcement crew was directed to follow the same route. On arriving at the fire, at 6:30 P.M., the officer in charge of the first reinforcement crew discovered that the most stratigical point for the second reinforcement crew to attack the fire could be reached much more readily by a different route. SP 18 was set up in approximately ten minutes and message transmitted in time to re-route the second outfit. About two hours later contact was made with the small crew that took initial action. From the officer in charge of the crew it was learned that 40 more men in addition to the second reinforcement crew would be needed to corral and make fire reasonably safe by ten A.M. the following day. This message was transmitted to SP 17, thence by phone to District Ranger and Supervisor's headquarters. This additional crew arrived on schedule and everything went smoothly.

Supplies were ordered, pack strings directed, provisions made for taking out sick men, and numerous details common to any fire were all handled by radio 100 percent on this fire. It is not at all unreasonable to presume that this fire might have burned several thousand acres if immediate communication had not been available, for the reason that the weather conditions on the day fire started and for several days following, plus the inflammable nature of the material in which the fire was burning contributed largely to conditions under which one could expect a much larger fire. The fire started in the middle of the day and covered 160 acres, practically all of which burned the first eight hours after discovery.

Two lookout firemen were sent to the Quartz Mountain Fire. Seven men were gathered and preparations made to send these seven men to fire by saddle and pack horses. They were about to leave for fire when radio message from P 57, through SP 27, was received, stating two firemen were on the fire and no additional men would be needed. These two firemen held this fire to a small Class A and the radio saved the expense of seven men and horses for at least three days; also, approximately $30 in truck hire.

Radio SP-19 was used 100 percent on the Gold Creek fire (Class C) to order additional men, supplies, and equipment. This fire was on a poor telephone line owned by the Lake Chelan Reclamation District but the line was entirely out of commission at the time. All instructions to the District Ranger's headquarters in regard to men and supplies were transmitted by radio.

Radio (P set) was used by Ranger to report the Insulator Creek fire (Class B) controlled. In this case dollars were not saved by ordering additional men or turning any back, but the organization had a better knowledge of the peak load it might expect.

Radio (PF 71) was used 100 percent on the Swamp Creek fire (Class C) in ordering supplies, messages to CCC camps as to when men would be back in their camps, etc.

Radio (P set) was used by lookout firemen on the Four Mile fire (Class A) 100 percent, to report condition of fire, etc.

It has been demonstrated in practice in the field that a fireman with a "P" or "PF" set and pocket mirror, when visible to a lookout equipped with radio, can locate himself in reference to a fire by calling the lookout and asking for the location of mirror-flash.

Radio communication has failed only on one fire during the past two years. This failure was on the Snehumption fire in September, 1932, and was traced to absolutely dead batteries, which evidently were shorted during the long pack trip.

Baldy Mt. Lookout, which has been occupied by a fireman-lookout for a six-weeks period each of the past two years, has been without telephone communication. In 1932 P Radio Set No. 73 was used. Schedules with SP 32 on North 20-Mile Peak Lookout and with SP 28 on Granite Mt. Lookout were maintained throughout this period. Four to eight schedules per day were established, the number depending upon burning conditions. Not one of these schedules was missed, and messages were transmitted and received 100 percent throughout this period. In 1933 this Lookout Fireman was furnished PF Set No. 22. This set was not equipped with a key and voice was used entirely. And during this season messages were received and transmitted 100 percent on schedule.

On the Stehekin District in 1932 three trail crews were working without telephone communication but were equipped with P radios. Administrative messages from the District Ranger in regard to their work, and instructions for holding crews in camp at approach of electric storms, orders for supplies, etc., were transmitted and received through SP sets. There was but few entire failures to make contact on schedule during the summer months.

Rangers Weeman and Burge have had almost 100 percent success in transmitting and receiving administrative messages with P sets, while in the field. All Rangers have carried P sets while on extended field trips when away from telephone communication. However, all have not had the outstanding success that Mr. Weeman and Mr. Burge have had. Assistant Ranger Tonseth, while on grazing administrative work, has also made good use of radio, by keeping in touch with the fire load on the District and ,in a few cases, saved himself miles of horseback travel.

The disadvantage in the use of P sets by firemen when on foot-travel is the additional weight to his already heavy pack and the apparent difficulty the woodsman type of firemen has in tuning in SP sets and transmitting code. Seven to twenty minutes is required by the average man to erect the antenna and install set. The time for setting up the set and getting it in operation is so short that it is not a serious disadvantage.

It would seem advisable to increase the power of the SP sets so that such fine tuning would not be necessary to receive them on a P or PF set. Also, PF sets should be used, or voice attachment added to our P sets, so that the woodsman type of fireman would not have to learn the code.

The use made of radio on fires and administrative messages during the past two years has already proven a great advantage. The specific advantages found in instances noted above, which occurred during light fire seasons, might well be considered as evidence of potential values greater than the cash investment and cost of maintenance.

The radio, with the exception of one case, worked 100 percent when actually set up on fires. On numerous fires radios were available but not used, as there were no messages to be transmitted.

In all cases of use there was an advantage in favor of the radio, because when this method of communication is available the use made is that much gained and nothing is lost. Saving of time at the beginning of a fire might in any one of many instances result in saving of money far greater than the entire cost of installation and maintenance up to the time of the fire. The percentage of chance for such instances occuring is high. On the other hand, the efficiency of radio communication is increasing, while the cost of maintenance as well as equipment is on the whole decreasing.

OUR CONSERVATION PRESIDENTS

(Editorial in "Minnesota Conservationist")

True conservation knows no petty partisan politics. Proof of this, if proof is needed, is the fact that of the two outstanding conservation presidents one was Theodore Roosevelt, a republican, and the other Franklin D. Roosevelt, a democrat.

Although more than thirty years separate the work of these two men, there is the closest relationship between their ideas and achievements in the field of conservation. Franklin D. Roosevelt, true, under changed economic and social conditions, is translating into life the principles which were first enunciated by Theodore Roosevelt. Theodore Roosevelt made the American people conservation conscious. He dramatized for them the tremendous waste of our natural resources and clearly recognized the need of social control of these resources by the people as against exploitation of the resources for the benefit of private individuals.

The time, however, was not yet ripe for Theodore Roosevelt to put into effect the far reaching, social control, as public opinion of his time was still thoroughly imbued with the ideas of "rugged individualism." All that he was able to do in his time was to save as much as possible of the remaining forested public domain by setting it aside as vast acreage of National Forests and thus protect it from private despoliation. He could not during his time go beyond the conservation of already publicly owned resources. The large area in private ownership, however, was still left to the unchecked exploitation by its owners.

What Theodore Roosevelt could not accomplish during his time Franklin D. Roosevelt, supported by a new public spirit and determination, is attempting to do today. Franklin D. Roosevelt, though as deeply concerned as was Theodore Roosevelt with the conserving and developing of the natural resources already in public ownership, is reaching out to bring under social control the resources now privately owned, yet whose conservation and development can not be trusted to mere private initiative and private greed. It was at the insistence of the President himself that Article X, whose main purpose is the conservation of privately owned timber land, was included in the Lumber Code.

It was Franklin D. Roosevelt's own idea to create the Civil Conservation Corps and utilize the idle labor of the nation's youth in upbuilding the forests, not only those in federal possession but also those in private ownership. The movement for erosion control, which is now receiving such a great impetus under his leadership, aims at saving the soil on private as well as on public lands. Attempts to coordinate river improvements with development of water-power, control of floods and navigation, and preservation of wild life again encompass not only public lands but also privately owned lands.

The same spirit and vision which compelled Theodore Roosevelt to view conservation of natural resources as basic to the welfare of the country move Franklin D. Roosevelt to place conservation of all natural resources, whether privately or publicly owned, among the most important objectives of his administration. With such leadership, the task of all true conservationists is simple -- to give the best of our efforts in supporting a President, striving for a goal which for years has been our common goal.

WHAT IS ECONOMIC SELECTIVE LOGGING?

By Axel J. F. Brandstrom, Pacific Northwest For. Expt. Sta.

At a recent meeting of the North Pacific Section of the S.A.F., it was evident that the term "economic selective logging" conveys different meanings to different people. As a result, confusion frequently arises during a discussion of this subject. In the final analysis, economic selection means a system of logging and management that rests on an economically sound procedure. It removes from the forest, in the order of their maturity, the trees which are financially mature. It conserves until maturity, trees financially immature but with a high earning power. It builds up the future productivity of the forest to whatever extent is profitable or required.

Many foresters hold that economic selection is merely a new term for ruthless high-grading and that it leads to wasteful log selection, deterioration of residual stands, and extreme fire hazards. The results of haphazard application of various forms of so-called selective logging support their views. They are not, however, representative of competently applied economic selection. On the contrary, the best silvicultural practices and the most effective measures of fire protection and slash disposal compatible with the attainment of economically sound objectives are part and parcel of the system. They exert a more or less important effect on the form of selection in different types of forest properties. Curiously enough, however, in the long-term properties of virgin timber typical of the Pacific Northwest, a strict application of sound financial procedure in liquidating surplus growing stock of mature values without immediate attention to long deferred silvicultural values will in many cases automatically lead to good silviculture and the elimination of fire hazards far beyond anything that one would dare hope for through artificial measures following the present system of wholesale forest devastation.

LUMBER CODE SUPPLEMENT REQUIRES NATION-WIDE PRACTICE OF FORESTRY

The recent approval by President Roosevelt of a number of amendments to the Lumber Code promises to give the practice of forestry in the United States its greatest impetus since the National Forests were placed under intensive administration more than a quarter of a century ago.

The amendments are designed to provide for the continual production of timber on all privately owned forest lands throughout the country. They were proposed by the Forest Conservation Congress held in Washington in January, and carried the endorsement of the Lumber Code Authority and the N.R.A.

The Code as now supplemented sets up general standards of forest practice to be followed by all timber operators under its jurisdiction and requires Divisions of the Code Authority to prepare detailed and specific rules applicable to their local forest conditions but conformable to the established broad standards. These rules must be submitted to the Code Authority for examination and approval, after which the Local Code agencies are to put them in effect and enforce them. The U. S. Forest Service and other interested public agencies are to have representation on the local governing and enforcing boards.

The project will go into effect June 1 and the forestry measures required will be mandatory on all timber operators subject to the jurisdiction of the various divisions of the Lumber Code.

Amendment to Article X of the Code sets up partial cutting or selective logging as the general standard for local forest practice measures under all conditions in which such type of operations is practicable. It also instructs the local Code agencies to study the extent to which trees of the smaller but merchantable sizes may wisely be left as part of the forest growing stock and to establish rules for cutting in line with the findings. Planting is recommended where natural reproduction from trees left on the area proves inadequate to restock the land, or where clear cutting of the merchantable stand is permitted.

Strong safeguards against fire are thrown about the forests. The individual operator is to be responsible for fire protection during logging. He must dispose of slash, enforce rules concerning smoking in the woods, provide spark arresters on locomotives and logging engines, suspend operations in dangerously dry weather and have his crews and equipment on immediate call for fire fighting.

The Divisional organizations of the industry are instructed to investigate the feasibility and encourage the establishment of sustained yield units from which, under proper forest practice, a regulated and continuous output of forest products can be obtained in perpetuity. This highly desirable form of forest management is to be fostered by the Code Authority through allowing lumbermen who place their operations on such a basis to increase the volume of forest products they are allowed to manufacture under the production allotment system of the Code. - C. E. Randall

TRUCK CONVOY

A convoy of 49 one and one-half ton Chevrolet trucks, and 13 pick-ups was brought overland last November from Baker, Oregon. Mr. C. W. Sauer of Central Purchase, and 27 CCC enrollees from the Kansas camps handled the job. Trucks were coupled together in pairs with tow bars, and the pickups were carried on the trucks. The whole job was accomplished without accident or undue difficulty. The estimated cost of the movement by rail freight would have been around $11,000. The actual cost amounted to $3,316.39, or $53.49 per truck. - From R-2 Bulletin

YE EDITOR DISCOVERS

At its meeting on March 26, the National Forest Reservation Commission approved the establishment of 13 new purchase units and enlargement of 13 existing units in 10 different States east of the Great Plains. The aggregate gross area of the approved new units and additions is more than 7,300,000 acres, but more than 1,000,000 acres of this is classed as unpurchasable. This action was taken for the reasons outlined in the last issue of the Service Bulletin.

Approval of new purchase units marked the entrance of Texas into the list of States to have National Forests. Four units with a gross area of 1,400,000 acres in the Southern Pine belt in eastern Texas were approved. They will be known as the Angelina, Davy Crockett, Sam Houston, and the Sabine purchase units. It is thought approximately 1,170,000 acres of the total area will be purchasable for National Forests.

Missouri, where an extensive National Forest program began last year, was given two new units, and the four Missouri units already authorized were substantially enlarged. The Commission's action will add a gross area of 1,677,840 acres, of which 1,459,840 are believed purchasable, to the units on the Ozark plateau in South Missouri. The new forest units are to be called the Wappapello and the Gardner.

Another new group of important purchase projects approved lies in the Piedmont section of North Carolina and South Carolina. Establishment of the Sauratown and the Uharie units was approved in North Carolina, and the Enoree and the Long Cane in South Carolina. Their combined gross area is nearly 1,500,000 acres.

The Commission also approved the establishment of the Croatan unit, near the coast, in North Carolina, with a gross area of 307,000 acres and the Bienville in central Mississippi, with a gross area of 382,000 acres.

In Puerto Rico, an entirely new National Forest unit, the Toro Negro, comprising a gross area of 112,000 acres, is projected in the central part of the Island, where timber supplies are short and watershed protection is essential.

Besides the additions to existing units in Missouri already mentioned, the Commission approved the following: Nicolet, Wis., 593,280 acres; Chequamegon, Wis., 336,149 acres; Green Mountain, Vt., 205,400 acres; Cumberland, Ky., 379,000 acres; Homochitto, Miss., 35,860 acres; Biloxi, Miss., 70,000 acres; and Kisatchie, La., 382,000 acres.

Purchases aggregating 154,420 acres in existing units were also approved.

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Under the plan adopted last year for relating grazing fees to market prices it has been determined that the average price received by western producers for beef cattle was $3.43 per hundred and the average price for sheep was $4.85. Applying the formula developed, this has given an average grazing fee for the season of 1934 of 7.51 cents per head per month for cattle and 2.385 cents per head per month for sheep. The average rate for cattle is 1.54 cents, or 17 percent, less than the average rate of 9.05 cents during 1933, and represents 51.8 percent of the average 1931 base fee of 14.5 cents. The average rate for sheep for 1934 is .335 cents, or 16.3 percent, more than the average rate of 2.05 cents per head during 1933, and represents 53 percent of the average 1931 base fees of 4½ cents.

Fees for both classes of stock in 1934 are practically on a par in relation to the appraisal rates. The decline in cattle fees and the increase in sheep fees are in line with the trend in prices last year.

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Three important wild life bills have recently been passed by Congress and approved by the President. These include a duck stamp bill (H.R. 5632) which provides that every migratory waterfowl hunter must purchase a $1 stamp at a convenient postoffice, this stamp to be affixed to his hunting license. The second (S. 2529) is known as the coordination bill and calls for the cooperation of all Federal, State, and other interested agencies in developing a nationwide program of wild life conservation and rehabilitation. The third (S. 2277) provides for creating on the National Forests and the public domain fish and game sanctuaries. This bill was first introduced in 1919 by Senator Robinson and amended several years ago to provide that game sanctuaries might be established by proclamation of the President upon the approval of the State legislatures. Neither the Department of Agriculture nor the Forest Service was asked to report on this bill. Had they been called upon to do so, certain changes in the bill would have been recommended.

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Word has recently been received from Belgium that seed of Douglas fir collected at Wind River, Washington, germinated better and the 4 year old seedlings are growing faster than those from seed obtained elsewhere. Included in the seed tested are lots from Montana, California, Colorado, Oregon, and two other localities in Washington.

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The well-known line, "Now is the time for all good men to come to the aid of the party," may be superseded by some good forestry facts in a new typewriting textbook now in preparation. PR in Washington recently furnished the author several passages on forestry subjects to be used as practice material of informative value to the student in the forthcoming book.

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The Naval Stores marketing agreement went into effect on February 21, 1934. It contains a conservation article which makes working of trees smaller than 9 inches or hanging two cups on a tree smaller than 14 inches a violation of the agreement. All producers are to be licensed. A control committee of nine members will execute the agreement.

GEORGE WASHINGTON WOODRUFF

Judge Woodruff, Public Service Commissioner of Pennsylvania and formerly law officer of the Forest Service, died at Harrisburg, Pa., on March 23, of coronary thrombosis following an attack of pleurisy, at the age of 70.

Woodruff was brought into the Forest Service by Gifford Pinchot in 1903, as legal adviser and aid in the development of Service policies and, upon the transfer of the "forest reserves" in 1905, in the development of National Forest administration. An indefatigable worker and a man of extraordinary intellectual power and originality, his contribution to the upbuilding of the Forest Service on sound, far-sighted lines, and particularly to the establishment of its National Forest policies on unassailable legal foundations, was of first importance. His direct participation in the work of the Service ended with his appointment in March, 1907, as United States Assistant Attorney General for the Interior Department - but not his helpful influence. As right-hand man to Secretary of the Interior Garfield during the period of most rapid development of conservation into a great national question of public policy, he remained a brother-in-arms of his old Forest Service associates, and a tower of strength in the counsels of the Roosevelt group of conservation leaders, amongst whom he held a conspicuous place. Never since have the relations between the Department of the Interior and the Department of Agriculture been established on so excellent a basis of cooperation, mutual understanding, sympathy, and common purpose as obtained during the two years of Woodruff's service in the older Department; and his exertions played a very important part in bringing this about.

To two men, Woodruff and Philip Wells, are due the laurels for the fact that, sailing uncharted seas in a public enterprise of novel character, they laid the course on lines so skillfully chosen from the legal standpoint that in no single case have the courts ever failed to find the policies adequately supported by law. The right to charge grazing fees, to regulate waterpower development on the National Forests and impose a charge for this form of special use, and other like crucial matters basic to the whole National Forest policy had to run the gauntlet of a determined attack as unconstitutional and be carried up to the Supreme Court for final adjudication. The Fred Lighte case was a notable example. To apportion precisely the credit between Woodruff and Wells for all of this is impossible, since they worked jointly in the latter part of Woodruff's period as Forest Service law officer and in close association after Woodruff passed over to the Interior Department; but Woodruff laid the first foundations.

Woodruff served as secretary of one of the sections of President Theodore Roosevelt's National Conservation Commission - the Lands section - in 1908, and was author of a portion of the Commission's report published early in 1909. He received from President Taft an appointment as Federal District Judge of the Territory of Hawaii in the summer of 1909, but resigned after a few months on account of his wife's health, and for some eight years was general counsel, secretary, and treasurer of the Pocahontas Fuel Co. and affiliated corporations. In 1918 he became again an associate of Gifford Pinchot in conservation activities, this time in Pennsylvania - his native State - where he had resumed the practice of law on his own account. After Pinchot's appointment as State Commissioner of Forestry in 1920 Woodruff assisted in the reorganization of the department, and upon Pinchot's election as Governor in 1923 Woodruff became Attorney General of Pennsylvania. He declined the same position for Governor Pinchot's second term but was appointed a Public Service Commissioner in July, 1921. This position was terminated by his death.- Herbert A. Smith

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FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XVIII No. 9 Washington, D. C. April 23, 1934

LIBRARY

NEW NATIONAL FOREST REGION TO BE ESTABLISHED

In order to more sharply focus our work in the Southeast, the large area now embraced in Region 7 is to be divided into two Regions. Effective July 1, 1934, a new Region will be established and will be known as Region 8, or the Southern National Forest Region. The headquarters of the new Region will be located at Atlanta, Georgia, and the territory included in its boundaries will comprise the States of North Carolina, Tennessee, South Carolina, Georgia, Alabama, Mississippi, Florida, Arkansas, Louisiana, Texas, and the portion of Oklahoma east of the Indian Meridian.

The present Region 7 will retain its numerical designation and will continue to be known as the Eastern National Forest Region. The territory within its boundaries will include the New England States, New York, Pennsylvania, New Jersey, Delaware, Maryland, Virginia, West Virginia, and Kentucky. The headquarters of this Region will remain in Washington. D. C.

Mr. Joseph C. Kircher will be transferred from his present assignment as Regional Forester of the Eastern Region to the new Southern National Forest Region. Mr. Robie M. Evans, at present Assistant Regional Forester in the Eastern Region, will be promoted to the position of Regional Forester for Region 7.

The present Region 8, Alaska Region, will be known as Region 10 in the future.

Coupled with this realignment of regional boundaries, the field inspectors in the East who handle the administration and supervision of the Clarke-McNary Law in this territory will be brought under the direction of the Regional Foresters. The Clarke-McNary work in the Western States has been handled in this way from the beginning and the transfer of the Clarke-McNary Law Inspectors in the East from the supervision of the Washington Office to the direction of the Regional Foresters will make the arrangement uniform throughout the Service.

In making these changes, the Forester said: "The realignment of National Forest Regions in the East is necessary in order to deal more effectively with one of the most extensive forest areas in the United States. A territory which involves not only problems of acquisition of additional forest lands, but probably the most complex problem of lumber code enforcement in the country. It should bring the Forest Service more directly in contact with local agencies, the States, and Counties, now under the emergency relief plan of organization in endeavoring to work out ways and means to get numbers of people now on the land again on a self-supporting basis to the full utilization of our raw resources. The National Forests, I feel, must play a vital part in this social economic approach to our relief program."

THE GOOD FIGHT

By B. F. Heintzleman, Washington

As this is being written we can visualize, in all parts of the country, scores of Forest Service men - management officers, research experts, logging engineers, Clarke-McNary inspectors and other varieties of foresters - working day and night with their usual zeal in a good fight, urging, cajoling, cussing and prodding hundreds of old-school lumbermen to force the writing into the rules of forest practice those requirements which foresters know to be essential to the success of forestry's newest enterprise. It is a fight worthwhile - it involves the future of 400,000,000 acres of privately owned forest lands in the United States. After 30 years or more of "whereasing" and "resolving" with really little expectation of getting much more than the "core" represented by the National Forests, foresters suddenly have had not only the whole apple but the entire orchard and packing plant thrown into their laps along with the challenge "This is what you wanted, now get busy and show what you can do."

Some European forester recently wrote over to remind us that it is the biggest opportunity ever offered the forestry profession in all history.

The Forest Service organization has certainly accepted the challenge with all the fervor of carrying on a holy war. The reports coming into Washington show a battle raging in every corner of the country, with set-backs here and there but always followed by a re-attack. On the whole good progress is being made. It is evident that the country is going to start off its nation-wide practice of forestry under sets of definite rules of forest practice, each based on the conditions in a particular forested region and known to be applicable and enforceable there. These rules should permit the building of a substantial structure - we can't expect to do the sand-papering and painting for some years. It took a decade or more to get the National Forests and particularly the rules and plans for handling their resources in such shape that they could be viewed with pride, and those forests were under full government control. On the other hand, foresters are finding that a considerable study of forest economics has been made at close quarters by timber owners since the early nineteen twenties, and the practice of forestry has thereby acquired many advocacates; also, that a much larger number of owners and operators have come to realize that some public control over timber output by N.R.A. or an equivalent successor is inevitable or there will no longer be a lumber industry - merely a short-lived frenzy of timber butchering that will mean economic disaster to them. They realize too that any such control will naturally extend to making provision for the care of the forests.

The foresters and these more thoughtful lumbermen are still in the minority but their number is increasing at a satisfying rate and the writer predicts that our private-land forestry project, in spite of the huge acreage involved and the handicaps incident to many ownerships and limited public control, will be a substantial and pretty fair looking structure at the end of its first ten years.

THE FUTURE OF THE C.C.C.

By R. A. Conard, Superintendent Co. 421, Blaney, S. C.

Having served in the capacity of superintendent of one of the C.C.C. camps since its organization, I have had the opportunity of observing at close range the results that have been obtained and to my mind they have exceeded expectations.

Recently F. A. Silcox, the U. S. Forester, made the following statement: "The Civilian Conservation Corps has served a great purpose and in my opinion would be a real contribution if such an experience could be made a permanent part of the education of the youth of this country." It seems to me that in this statement Mr. Silcox has suggested a wonderful plan for the future welfare of our country.

If the C.C.C. has proved so beneficial in the case of 300,000 young men why not make it permanent and extend it to include the whole youth of the nation? Why not make it compulsory for every able-bodied boy, upon reaching the age of 18 or upon graduation from high school, to serve one year in a C.C.C. camp?

In contemplating such a program the question at once arises what sort of work could be outlined that would keep from one to two million boys occupied over a period of years? For it is evident that such an army of workers would soon complete any ordinary forestry program. I have a plan which I think satisfactorily answers this question.

I would suggest that all camps be placed on tracts of land containing 2,000 or more acres, these tracts to be purchased by the government. If possible, half or more should be in woods and at least 200 acres of the balance should be fertile land. The work to be undertaken would consist of the following: Forestry work; establishment and maintenance of game sanctuaries; farming; education.

Five hundred or more acres should be fenced in for a game sanctuary and this tract should be stocked with various types of native game. Farming should be undertaken with the double motive of teaching the boys scientific agriculture and making the camp partially self-supporting. There should be a garden sufficiently large to supply all vegetables. and a canning plant should be installed.

Milk cows, hogs and chickens should be raised in sufficient quantities to supply camp needs, and feed crops grown to care for them. Native fruit and nut trees should be planted. In other words, diversified farming along scientific lines should be practiced. Where feasible, irrigation should be used.

At least one hour per day should be devoted to classes in elementary studies such as mathematics, English, civil government and history. In addition, courses might be given in carpentry, mechanics, etc.

It is believed that with such a program, instructive and healthy work would be provided over an indefinite period and that the boys would be better citizens as a result of the experience.

1933 PLANTING BREAKS ALL RECORDS

By J. A. Fitzwater, Washington

A review of the Regional planting reports for the calendar year 1933 shows that a total of 69,215 acres were planted on the National Forests. This figure is exclusive of experimental plantations. The acreages planted under the different appropriations are shown below:

Region	Regular	E. C. W.	Nira	Total
1	3,778	-	4,620	8,398
2	2,571	123	-	2,694
5	870	-	-	870
6	1,762	1,144	-	2,906
7	2,210	3,154	-	5,364
9	2,045	41,422	5,516	48,983
Total	13,236	45,843*	10,136	69,215

(* 1902 acres charged here which may possibly have been partly Nira)

Compared to previous years this is a very encouraging showing. Fortunately there had already been considerable expansion in Forest Service nursery capacity in the East due to the stimulus given by the Knutson-Vandenberg Act. However, to accomplish last year's program it was necessary to make large purchases of planting stock from commercial nurseries. With money for nursery expansion made available through emergency funds it was possible during the past year to build up our production capacity to a point where we can probably duplicate during 1934, with stock grown exclusively in our own nurseries, the acreage planted in 1933. Our entire program this year is dependent, however, upon emergency funds, since no money for field planting will be available from the regular appropriation. Now that we have made real headway in meeting our planting problem, it is hoped that sufficient funds to maintain an enlarged program in subsequent years will be available either as the result of continued emergency appropriations or from the regular planting appropriations.

The following table shows the National Forest areas planted during five years prior to the calendar year 1933:

1928	18,825 acres
1929	18,196 "
1930	21,702 "
1931	26,814 "
1932	24,755 "
Average 5-year period	22,058
1933	69,215

USE OF RADIO IN FIRE CONTROL 1933 ON SISKIYOU FOREST

(From a report by M. M. Lewis, Siskiyou)

A number of instances occurred last summer where radio was used to good effect. Probably the most valuable service we received was on the Slide Creek fire which occurred during that bad period of weather when the Tillamook fire made its greatest spreads.

Immediately after the first crew arrived at the Slide Creek fire, radio communication was established with the Redwood Ranger Station and with Bolivar Lookout. A schedule of calls was established, and only once during the time was there any difficulty in completing the schedule, and that was due to weakened batteries from excessive use. In this particular case, however, communication was maintained between the fire camp, and the outside supplies were ordered and sent to the end of the road, from where they were packed in by pack train. Men were ordered and reports every two or three hours were sent out to headquarters advising of the condition of the fire. In other words, the communication was almost as serviceable as telephone would have been.

In the Galice District, a fire was reported in Rocky Gulch. The fireman was sent to the fire, and took his radio. He could find no fire, and set up and called Rand R.S. In the meantime the smoke had died down. By setting up his radio at intervals, he was directed to the exact spot, and it proved to be a permitted fire but was completely out at the time the fireman arrived.

Such communication is invaluable, especially at times of high fire hazard. In the course of two or three hours, this fireman was able to complete his mission to the satisfaction of both the lookout and dispatcher. Without the radio he would have had to come back to telephone communication and probably make another trip in there before he could be sure the fire was out.

In the Agness district, the Steffins Meadow fire was discovered at 8:45 a.m. on September 3. The lookout fireman and 2 trail maintenance men were being dispatched to the fire. Ten men were sent from the Agness R.S. with tools and supplies, and the ranger figured that due to the high fog he had really overmanned the fire, but on account of the critical period, felt that it was justified. The ranger later left for the fire with a radio set. (The lookout-fireman was not equipped with a radio set). As soon as the ranger got down under the fog he could see that the fire was burning in three or four different places, and that it would require considerable more men than he had sent. He immediately set up the radio, called the Redwood Station, where there was a standby speaker, and in about 10 minutes had 20 more men started to the fire. Had he not had the radio, it would have required the traveling of a distance of approximately 5 miles by trail, and making an elevation of over 3,000 feet, to have ordered these additional men. In other words, from 3 to 4 hours' time was saved in getting the additional men started.

In the Chetco district, Ranger Holst was out in the field on general work carrying a radio with him. He set it up at a certain point to call the lookouts for the purpose of having them triangulate his location, and was notified that there was a fire burning over on the Chetco river drainage which needed his attention. He immediately left for the fire, and arrived there probably seven or eight hours sooner than he would have had he not been able to make this contact.

One other instance which shows what the possibilities of the radio are was when Blevins and Owen, our law enforcement men, were on the divide between the Klamath and Siskiyou Forests, and were trying to locate 2 men who had recently gone out over a road. They had a radio and set it up to communicate, but apparently were not operating it properly; while they could hear other lookouts talking in their vicinity, they could not make themselves heard. It was necessary for them to drive a distance of 12 or 14 miles before they could get to a telephone communication and locate the party that they were after. Had they been able to operate their set, the failure of which was due to not making a certain connection that they had been obstructed on, they would have been able to save themselves this travel and time.

RADIO FANS WELCOME RANGERS BACK

The return of "Uncle Sam's Forest Rangers" to the air brought a flood of rejoicing fan letters. Some of them are being quoted:

"Welcome back Forest Rangers, we missed you, while you were on your vacation. Thank you Bess - Mary - Jerry - and Jim, for the pleasant hours we spent together and the many more we expect to be together in the future."

The Ellison Family, Philadelphia, Penna.

"Am glad to hear 'The Forest Rangers' again on the Farm and Home Hour, I consider it one of the best programs on the air."

Mrs. C. C. Sours, Charlottesville, Va.

"And aren't we glad to have the Forest Rangers with us again! ! We've heard the voices but now they're here 'in person' again! And 'getting home' is always the best part of going away.

"The Farm & Home is the best all-round program on the air."

Mrs. J. W. Woods, Lakewood, Ohio.

"Just want to say that I am glad you have again started the series of Forestry broadcasts on the Farm and Home Hour. Have enjoyed them very much, particularly the information as to Forestry work.

F. L. Hutchins, Baltimore, Md.

"Sure glad you are all back again. Always like to listen to their drama. Welcome them back, and hope they continue for some time to come."

Effie Moyer, Northumberland, Pa.

"Now the Farm and Home Hour is complete again. With Jim, Bess, Jerry and Mary gone the program had lacked the one feature which always has made it the best program on the air. My Wife and I always stay home when the Ranger is on so here's hoping we'll have to stay home a lot."

B. L. Porter,Shreveport, La.

"Have just been listening to the program of 'Forest Rangers' and am so delighted to have them on the air again I had to say thank you."

Mrs. C. E. Conklin, Bayside, L. I.

"Not old enough yet to talk - listener for not quite a year - but must break the silence somehow for our dear friends 'Mary', 'Jerry', 'Bess' and 'Jim' are home now at Pine Cone Range. Welcome! again welcome! ! three times welcome!!!

"We have missed you so 'Happy days are here again'. We are so glad . We have been 'Sitting up waiting for you' enjoying the 'Farm and Home Hour' a great program for us. We hate to miss any of them."

I. B. McKay, Durham, N. C.

"It was a great treat to hear you over the radio again.

"Your nice, clean performance seems to bring into the home the fresh, exhilarating air of the mountains."

Mrs. W. K. Travender, Haworth, New Jersey.

"I am so glad that you are back with the Forest Rangers as I enjoy them so much, and never miss one of their programs."

Mrs. Geo. R. Randall, Rock Hill, S. C.

"We would desire to express our appreciation in having the Forest Rangers on the program again - being connected with the Game and Fish Department of our State - we realize how much need there is for such a program as theirs and know it accomplishes a great deal for the Forestry Service."

Mr. & Mrs. F. N Schmalle, Cheyenne, Wyo.

"Just want to let you know how much I enjoyed 'Uncle Sam's Forest Rangers' today. Was I glad to hear them? You bet I was. Don't ever let them go away any more. And I really think that Ranger Jim Robbins has the best heart in him that any man ever carried. I thoroughly enjoy it all and all of the whole hour.

"Will be listening for you every day."

Mrs. Albert P. Finch, Bailey, N. C.

YE EDITOR DISCOVERS

Several years ago the Department of the Interior decided that the Southern Pacific Railroad Company was entitled to make indemnity selections for deficiencies in its railroad land grant, notwithstanding the fact that the only lands available for such indemnity selection had many years previously been reserved for National-Forest purposes. This decision caused a feeling of consternation, as the 60,212 acres in the Angeles and San Bernardino National Forests subject to selection not only were of great value for recreational use watershed protection, etc., but had been intensively developed under special-use permits and for administrative purposes, and contained a large number of valuable summer-home residences, resorts, ranger stations, lookouts, etc. Apparently nothing could be done to safeguard the permittees.

On July 22, 1929, a fire alleged to have been started by a Southern Pacific locomotive destroyed timber, etc., to the value of $204,862 in the Modoc National Forest. Proof of Southern Pacific responsibility was strong but had not been established by legal action.

Mr. Sherman, Associate Forrester, suggested that a happy solution would be for the Southern Pacific Railroad to pay $10,000 cash in partial liquidation of the damages, and to compensate the United States for the remainder by waiving all its rights to select the 60,212 acres. On April 3 this arrangement was approved by the Secretary of the Treasury and the threat of alienation of the tentatively selected lands, with its hazards to both public and private improvements, now happily has been dispelled.

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The following Experimental Forests were recently designated by the Forester:

Fernow Experimental Forest, Monongahela, N. F., W. Vir.,	3,640	acres
Toccoa Experimental Forest, Cherokee, N. F., Georgia	2,315	"
Coweeta Experimental Forest, Nantahala N. F., N. C.	4,300	"
Eastern Lassen Experiment Forest, Lassen, N. F., Cal.	10,250	"
Sylamore Experimental Forest, Ozark N. F., Ark .	2,500	"
Olustee Experimental Forest, Osceola N. F., Florida	3,280	"
San Dimas Experimental Forest, Angeles, N. F., Cal.	17,163	"
Wind River Natural Area and Experimental Forest, Columbia N. F., Wash.	1,180	"

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A new "sound power" telephone instrument, which operates entirely without batteries, may prove to be the solution of some of the Forest Service telephone battery troubles. This instrument was developed by commercial telephone companies for use by the U. S. Navy. The power is generated by a permanent magnet placed in the receiving end of the instrument and by the vibration resulting from the voice. Two of these instruments were recently hooked up at the Bureau of Standards with resistance equivalent to 450 miles of standard telephone line. The voice came over this resistance with almost perfect results. The manufacturers claim that this instrument will work equally satisfactorily on grounded telephone line. The Forest Service has purchased two of the instruments, which will be tried out in Region 6 this summer.

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Reports concerning the Civil Works Program which is now drawing to a close on the new purchase units in Missouri show that a remarkable record has been made. The mileage of road and telephone line construction runs into the hundreds.

An indication of the type of men who were recruited for the jobs and their attitude toward work is given in the following : "During an enforced moratorium on purchases it was impossible to buy gasoline for the tractors. In two counties, County funds were used to get gas and in the third county, to quote the county supervisor, 'we managed'. An investigation showed that the various foremen and the drivers were buying the gasoline from their own pockets."

An inspection report by technician Donald W. Winters contains the following interesting slant also bearing on the attitude of the personnel: "The crew I saw in action has a toolman who was the blacksmith when they were on road construction work. But this day instead of the blacksmith outfit he had an emory wheel driven by a small gas engine mounted on the back end of a Ford coupe. He moved from crew to crew along the road keeping the axes sharp. Also, plenty of files were provided for the same purpose."

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By means of chemical analyses of samples from burned and unburned areas an attempt was made by members of the California Agricultural Experiment Station to ascertain why the forage on burned areas is more palatable to livestock during the first year following the fire. In one area a decided increase in phosphorus was shown to exist in broadleaf alfilaria and to a less extent in wild oats on the burned area. This was not substantiated in a limited number of samples taken from two other areas with more fertile soil.

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A new organization with considerable potentialities is being formed among CCC men. Its purposes are to carry the spirit of the CCC back home when the men again take up their regular mode of life and to promote a spirit of patriotism, good-fellowship, and interest in conservation.

Membership in the CCR is to be limited to men honorably discharged from the Civilian Conservation Corps; Army officers, non-commissioned officers, and enlisted men who served with the CCC for a period of at least six months; and foresters, camp superintendents and others who were actively associated with the CCC for at least six months.

"Happy Days", the weekly paper devoted to CCC news, is sponsoring the organization of the CCR until it has enough strength to carry on alone.

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C. K. Cooperrider of the Southwestern Forest Experiment Station is in Washington for a month's detail in connection with work on manuscripts dealing with the erosion studies he has been conducting for many years. Most of these studies have been centered on the Tonto and Crook National Forests.

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A recent visitor to the Washington Office was Mr. E. L. Neuman of Victoria, Australia. Mr. Neuman has been studying at Oxford for the past year and is now enroute home via the United States. He plans on making a trip through the Southern States before sailing from San Francisco in May. On his trip Mr. Newman will visit several of the National Forests and Forest Experiment Stations. He is in charge of management plan work in Australia.

Another Australian forester studying in the United Srates is W. M. McNeil, who last year made an extensive trip throughout the United States. McNeil will also return to Australia sometime during the spring.

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Word has recently been received of the death of Dean F. G. Miller, head of the Forest School at the University of Idaho. Dean Miller has for many years worked in close cooperation with the Forest Service and his sudden death due to heart disease was a shock to his many friends and former students throughout the Service.

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FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XVIII No. 10 Washington, D. C. May 7, 1934

NEW WILDLIFE REGULATIONS ISSUED BY SECRETARY WALLACE

Two new regulations for the control of hunting and fishing in the National Forests have been promulgated by Secretary Wallace. The regulations are designed to provide for larger and more direct contribution by the Forest Service to wildlife management on National Forest lands. They will be applied only where present cooperative arrangements have proved inadequate and are expected to facilitate management of the wild life on a sustained production basis, coordinated with other uses of the forests. The text of the Secretary's order follows:

WHEREAS, wild life is one of the major resources of the National Forest land and water, and its management and development are an essential part of the administration of the National Forests; and

WHEREAS, the prevention of overgrazing and erosion and the protection of watersheds, timber, and other resources are dependent upon the regulation of wild life population to the carrying capacity of the land or water, and such regulation is also essential to maintain the productivity of such land and water for wild life; and

WHEREAS, the regulation of wild life population by hunting and fishing is the most effective means of limiting the population to the carrying capacity of the range or water and of disposing of any excessive numbers; and

WHEREAS, the regulation of hunting and fishing on the National Forests is effective in reducing the fire hazard and in promoting the conservation, development, and proper utilization of National Forest resources; and

WHEREAS, plans for the development of the wild life resources, including the regulation of hunting and fishing, should be closely harmonized with the plans and objectives for the management of other National Forest resources to insure the maximum public benefits;

NOW, THEREFORE, by virtue of the authority vested in the Secretary of Agriculture by the Act of Congress of February 1, 1905 (33 Stat. 628), amendatory of the Act of June 4, 1897 (30 Stat., 11), I, H. A. Wallace, Secretary of Agriculture, do hereby make and publish the following regulations for the occupancy, use, protection, and administration of the National Forests:

REG. G-20 A. When the Secretary shall determine upon consideration of data and recommendations of the Forester that the regulation or the prohibition for a specified period of hunting and fishing upon any National Forest or portion thereof is necessary for the accomplishment of the purposes above set forth, he shall designate such National Forest or portion thereof, establish hunting and fishing seasons therefor, fix bag and creel limits, specify the sex of animals to be killed, fix the fees to be paid for permits, designate the authorized official to whom application for permit shall be made, and describe the terms and conditions under which hunting and fishing shall be conducted with a view of carrying out the purpose of this regulation. Public notice of such designation shall be given by such means as the Forester shall deem adequate for the purpose. Carcasses of animals or fish taken under permit shall be marked or tagged for identification as directed by the Forester.

REG. T-8½. Upon National Forest lands designated under Reg. G-20 A the following acts are prohibited:

Hunting, trapping, catching, disturbing, or killing any kind of game or non-game animal, or game or non-game bird, or taking the eggs of any such bird, except during hunting and fishing seasons established by the Secretary, and in accordance with the terms and conditions of a permit issued by a duly authorized officer which is valid and subsisting at the time.

PRESIDENT ROOSEVELT GIVEN REPORT ON FIRST YEAR'S WORK OF CCC

A report of the results attained during the first year of Emergency Conservation Work was recently submitted to President Roosevelt by Director Fechner. This report consisted of letters prepared by Director Fechner, Secretary of War Dern, Secretary of the Interior Ickes, Secretary of Agriculture Wallace, Secretary of Labor Perkins, and Brig. Gen. Frank T. Hines, whose organization selected the war veterans' quota.

Parts of some of the letters are quoted below:

"I am happy to state that all the departments directed by you to aid in the camps program have cooperated whole-heartedly and efficiently. I also want to express my appreciation for the splendid cooperation the Emergency Conservation Work organization has received from the Governors of all the States, and from state and local organizations in each state.***"

"As Director of Emergency Conservation Work, I want to point out that since the forest camps program was initiated, employment has been given, or will be given by the end of this month, to approximately 600,000 men, most of them youngsters between eighteen and twenty-five years of age. This group includes the 300,000 who first entered the camps last summer; the 190,000 who entered the Civilian Conservation Corps and Indian camps as replacement during the second six months enrollment period, and the more than 100,000 men who are entering the camps as replacements this April. The average enrolled strength for all the camps is maintained at just below 300,000 men.

"In my opinion, operation of the forest camps has clearly enhanced the value of our forests and parks, relieved an appreciable amount of distress and spurred business recovery by furnishing an active market for the sale of food, clothing, manufactured goods, automotive equipment and other supplies, needed to keep the conservation program in operation. The hundreds of thousands of young men and war veterans who left city and village streets to enter the healthful environment of the forest camps, entered their work on a purely voluntary basis. No military training was involved. All of these men have been improved physically. Almost every man has increased in weight. Most of them have developed new self-respect, greater self-reliance. There is evidence that their morale, as well as the morale of their dependents, has been lifted. Thousands of young men have been taught how to work. The camp movement has shown that young men would rather work than go on relief.

"The letters of the Secretaries of the Interior and Agriculture contain detailed figures proving that our forests and parks have been improved, expanded and given substantial new protection from fire, diseases and insects.

"The popularity of the camps is attested by thousands of letters written to Washington, by the 5,000 applications for new camps that came in this Spring, by the friendly attitude of communities, where camps are located, toward the men of the Conservation Corps, and by the fact that a hasty check-up this spring showed 300,000 young men ready and anxious to enter the corps at the first opportunity."

ROBERT FECHNER
Director

"The major interest of the War Department has been in the man himself. Its chief pride lies in his improvement. No group of men understands youth so well or holds it in greater affection than does the commissioned personnel of the Army. With no desire to inculcate a military discipline, the understanding leadership of Army officers has lifted the head, quickened the pace, given assurance to the approach of practically every member of the Corps. Feelings of inadequacy and inferiority have largely vanished, confidence has been restored, a higher morale is evidenced in greater courtesy, consideration, sense of responsibility and the wish to co-operate with others in common pleasures and endeavors.

"The economic results of the program of Emergency Conservation Work have naturally been more tangible. Allotments made by members of the Corps to their dependents have totalled more than $59,250,000 during the year. Actual disbursements to March 1, have totalled $255,000,000, two-thirds of which has poured directly into the channels of industry, commerce and agriculture to accelerate their recovery."

GEO. H. DERN
Secretary of War

"The presence of the Civilian Conservation Corps, representing an immediately available supply of man-power, was a large contributing factor in reducing fire-fighting expenditures, acreage burned, and damage to National Forest lands. The fire record for 1933 is one of the best ever recorded in the history of the National Forests. Damage was held to approximately $325,000, which is less than seventeen percent of the average annual loss during the previous five year period. Also, through the construction of numerous lookout houses and towers, telephone lines, roads and trails, the detection, communication, and transportation systems, essential to fire control, were perfected on a scale far in excess of that reached ordinarily within a decade.

"Effective work toward the control of the white pine blister rust disease was accomplished on some 2,600,000 acres of forested lands, during the first year of the Corps' activity. This represents the first large-scale, mass attack ever directed against this menace in the great white-pine forests of the Pacific Northwest, where, despite all previous efforts, the disease has continued to spread and has threatened to wipe out the entire white-pine lumber industry of that region. The timely work in this instance has likewise been the means of opposing the march of this disease into the California sugar pine forests, the most valuable timber species of that State.

"Another outstanding event of the year was the impetus given to forest planting. Despite the fact that only a relatively short period of the planting season was available after the conservation camps were established, approximately 72,000 acres (72,000,000) trees were planted by members of the corps before the year closed. The area planted on the National Forests was over twice the maximum area previously planted in any one season. In addition, some 200,000 pounds of tree seeds were gathered, all Forest Service nurseries were seeded to capacity, and conditions made possible for a much larger program in 1934.

"Protection of privately-owned forest lands — four-fifths of the nation's forest area — in which the federal government has been participating financially since 1911, has been advanced at a highly accelerated rate through the help of the CCC.

"Prior to 1933, very little progress, beyond the experimental stage, had been made toward the control of floods and soil erosion. The Emergency Conservation Work, however, has made it possible to establish controls sufficient to benefit more than 500,000 acres. Control measures have been largely in the form of check dams and revegetation. Incidental to check dam construction, in excess of 1,300,000 cubic yards of earth, rock, and cement have been handled. The far-reaching effect of this work may be exemplified by the Wisconsin project where it is estimated that for every cubic yard of earth placed in earth dams, eleven cubic yards of earth will be saved from erosion during the next ten years.

"In addition to the above, the presence of the Emergency Conservation Corps within the National Forests has resulted in material development of the recreational and forage resources and in the completion of numerous long needed administration improvements. Various types of water systems, installed on camp grounds for the adequate protection of health, have been doubled. The mileage of range fences and number of stock watering projects were increased over ten percent; and, over 36,000 acres of poisonous plants were eradicated, an increase of close to fifty percent over the average year."

H. A. WALLACE
Secretary of Agriculture

"The specific projects which have been completed will aid field officers of this Department in an effective manner to conserve and preserve natural features in our distinctive national parks and monuments and in the public domain and Indian reservations. Protection against fire and insect infestation, blister rust and tree disease, and roadside fixation and erosion control have been major accomplishments. The availability and utilization of Emergency Conservation Work enrollees for fire fighting to a large degree accounts for a 37 percent reduction in fire losses in 1933 as compared to the previous year in our national parks. Further detailed description of the several classes of projects would include activities that tend to protect, develop, and perpetuate existing natural areas, preserve forest cover, prevent soil erosion, reduce fire hazards, and establish the means for our citizenship to reach and utilize the scenic and primitive areas without despoiling them. The work has been national in character and the results have thoroughly justified the public trust.

"The effective manner in which the Office of Indian Affairs has extended the Emergency Conservation Work program to our Indian reservations has been of a very spectacular nature. The program has been carried out in a unique manner with Indians, to a large degree, used to supervise the work on the various projects. A maximum amount of direct relief has been extended to the Indians on the reservations."

HAROLD L. ICKES
Secretary of the Interior

"In the selection of this multitude of young men, the Department of Labor, utilizing local committees, has secured representatives from every township in the United States. The group thus enrolled is a representative cross-section of American young manhood. They are looked upon in each community from which they have departed as the personal representatives of that community. So long as they are in the service, their welfare will be the subject of community interest and discussion.

"In consequence, it is clear that no single attack upon unemployment of similar magnitude could have accomplished more good socially and economically or have aroused more wide-spread and deeply felt approval."

FRANCES PERKINS
Secretary of Labor

PRIVATE FORESTRY

(Excerpt from comments made by Russell Watson, of Banzhaf and Watson, Inc., Milwaukee, at the annual meeting of the Society of American Foresters, Dec. 28 - 30, 1933)

Starting now, private forestry must be built up. It cannot be imposed onto the existing set-up. It unquestionably will build up.

The man who owns the forests and who does a little selective logging in the hardwoods and a little gentler cutting in the swamps, and who recognizes when he finishes cutting that he has a first-class potential forest, is simply foolish as a business man if he does not hang on to it. Our own company now has some thousands of acres of forest which we bought, have cut over somewhat, have taken off enough timber to pay for the property and have a little revenue over besides, and these acres support a splendid growing forest which will be ready to cut again in a few years.

What we need at the present time is the knowledge of how to cut forests. A few real demonstration forests from five to fifteen years old would be of the utmost benefit.

Private forestry moves forward as a natural consequence, side by side, with satisfactory fire protection, taxes levied in proportion as the property should pay, demanding markets. It cannot be pushed ahead. If a timber famine is coming, if mills are going to cry for raw materials, it is the most obvious thing in the world that there will be a distinct effort by private capital to supply the need. If it does not come, if the sustained annual yield, resulting from our present more or less hit and miss system of forest land economics, is sufficient to supply our mills, then, certainly, we do not wish to push beyond.

A well balanced program of state, federal and private forestry is unquestionably essential to our economic well being, but I am a bit dubious that the time is now at hand when even the smartest of us can say just how it should be set up. In the meantime, I am rather of the opinion that it would be well not to rush forward too rapidly, to catch our breath, and take things a little easy, and take stock of just what our industrial needs are going to require of our forests and how they best can be met.

THE FOUR HORSEMEN RIDE AGAIN

By John Steven McGroarty in the Los Angeles Times, January 7, 1934

During recent four days and nights the Four Horsemen of the Desert rode again, leaving behind their hoofprints in a tale of death and disaster as they have done before and as they will do again if we are not aroused from our unbelievable stupidity.

These be the Four Horsemen of the Desert -- Fire, Flood, Wind, and Drought. The same riders that destroyed Babylon, the cities of Cyprus and thrice the thousand other cities of the earth that archaeologists are digging up from ancient erosions and of which no man of today ever dreamed.

A few weeks ago a fire devastated what little natural growth of tree and shrub was there, newly sprung after devastations that had gone before throughout the years of man's tragic ignorance and wastefulness. Then came the storm. The Four Horsemen rode the bare desolated hills with death and destruction champing at their bridle reins. Drought, Wind, and Fire had already ridden, and now they were joined by flood.

The torrents fell through four days and nights only. But suppose the downpour had continued forty days and nights - which is always a possibility - where would our proud city of Los Angeles be then?

It would be with Babylon, and with Nineveh and Tyre, with the buried cities of Cyprus and Yacatan, with all the once great cities that were builded on desert plains as Los Angeles had been builded.

Forty days and nights, or even less, of torrential rains sweeping the fire-denuded mountains, walls of water leaping down the canyons, hurling villages and towns in their paths against the Buena Vista bridge and other impediments, mounting those obstacles, carrying tons of silt - imagine the picture! Our Tower of Babel, the City Hall, toppling and crashing from its foundation, temple and mart of trade buried in the silence of oblivion.

The mountains are our menace - the mountains that should be our friends and that would be our friends if we would save them for our uses.

What must be done if Los Angeles is to survive, is to reforest the mountains and to man them with fire-fighting equipment and men, exactly the same way that we now protect our cities against fire. A stray forest ranger, here and there, is merely a further display of our futile-mindedness. The city boob finds the mountains, which he destroys with his cigarette and his abandoned camp fire. He exists and we must have protection against him.

We could have had ample reforestation and fire protection in the mountains if we would select men of vision for our sessions of the State Legislature and Boards of Supervisors.

But will the time ever come when others than mere politicians with a single thought of emolument are to be put in public office? Just "nice fellows" and "good enough" men won't do. We must have men who realize the challenge of the four Horsemen and who will act upon their realization.

The more we build, the more there will be for the Horsemen to destroy unless we learn the lesson of Babylon.

YE EDITOR DISCOVERS

A check upon the efficiency of other business barometers is afforded by the comparatively slow rate at which the twenty million dollars allotted by the President for land purchases last July is being expended. A year ago there were ample grounds for the belief that, with adequate funds available, Uncle Sam had an almost unlimited choice of selection of forest properties at price levels far below all previous averages. Land owners not only were willing to sell, but begged and implored opportunities to sell.

The first programs following the allotment of funds were of large proportions, but each succeeding program reflected the revival of economic optimism. His hope inspired by a well paid job on an ECW, or NIRA, or CWA project, the owner who had thought of selling his 160 acres to the Government decided to retain it with the exceptation of ultimately realizing a greater return. With better markets and higher prices in prospect, operating companies concluded that, instead of offering their cutover or other holdings to the United States as a means of meeting payrolls or other obligations, they would sit tight and see whether Uncle Sam eventually would not offer a higher price for their property. There were, of course, other factors, such as the deflation of the dollar and the contention that, since the administration was committed to higher prices for labor and commodities, it should also offer higher prices for forest lands, but the quick reawakening of economic activity and industrial confidence probably is the major reason why the acquisition program has not progressed as rapidly as had been hoped.

In its seven meetings since last June, the National Forest Reservation Commission has approved a total of 3,233,862 acres. This record, of course, dwarfs all previous records, since it means that in ten months we purchased 80 percent as much as the total for the preceding twenty-two years. Nevertheless, it falls short of the average of 500,000 acres per month which had been set up as the desirable goal.

New fields of purchase have been created by the additions and new units approved by the Commission on March 26. Whether the opportunities there for rapid purchase are better than in the old units remains to be determined by processes of trial and error. But if the basic cause of delay is the birth of a speculative spirit rising out of a gradual improved business condition, the difficulties of purchase may be as great in the new units as in those previously established. The fact that the public mind has now attained a condition of confidence in the future, sufficient to cause a rejection of fair current values in the expectation of ultimately larger returns, is another indication that happy days are at least on their way, if they have not already arrived.

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The Izaak Walton League meeting, held in Chicago on April 19-20, was attended by about 250 delegates from local chapters. It was one of the liveliest meetings that have been held during the past two or three years, the program being interesting, instructive, and well carried out. Assistant Forester Rachford presented a paper on "Social Values of the National Forests." Mr. Harry McGuire, Editor of Outdoor Life, also appeared on the program and reiterated his indictment against the Forest Service for allowing sheep to graze on the National Forests. His talk was followed by a discussion of the situation, Dr. Dixon, President of the Izaak Walton League of Colorado, acting as chairman. Dr. Dixon explained the controversial phases of the question and proceeded to enlighten the meeting on both sides of the issue. It was apparent that he had fully informed himself on the subject before coming to the meeting. A resolution on this question was adopted which supports the Forest Service in its present practice, except that it specifically requests that consideration be given game in all cases where a conflict between it and domestic livestock occurs.

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Because of the unusually heavy load being carried by local Forest officers in setting in motion the NIRA program and moving ECW camps, and the advanced season with the prospective bad fire situation, the grazing conference which was to have been held at Ogden, Utah, on May 14 has been postponed until fall. It is expected that the preparations will go forward as anticipated, with the exception that a greater length of time will now be allowed for such work. This should permit much more careful thought and study on some of the fundamental questions involved, and insure a much more successful meeting than if it had been held as contemplated.

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The Taylor Bill (HR 6462 - proposing that authority be given the Secretary of the Interior to create grazing districts on the public domain) having passed the House is now before the Senate Public Lands Committee. On April 20, this Committee held a hearing, at which Secretary Ickes made a very strong statement in favor of the bill. Hearings were resumed April 26 at which time the Forester appeared in general support of the measure but filed a written statement suggesting that it be amended in two particulars.

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Capt. John B. Woods, former forester for the Long Bell Lumber Company, with headquarters at Longview, Washington, has accepted the position of Director of Conservation with the Lumber Code Authority in Washington, D. C. Mr. Woods' experience with the Long Bell Company covers an extended period in forestry work with southern pine as well as the Pacific Northwest species. As Director of Conservation, he will coordinate the rules for forest practice formulated by the eleven divisions and subdivisions, which constitute the regional administrative organizations under the Lumber Code Authority, to carry out the provisions of the fair practice for lumber and timber industries. He will also assist the Lumber Code Authority in carrying on negotiations with the interested public agencies in conservation matters under the code.

John D. Guthrie, who has been serving as liaison officer for the Eighth Corps Area, is being transferred to the Washington Office, effective May 15. He will be general inspector of CCC work in the territory east of the Missouri River.

Arthur C. Ringland is also being transferred from his position of liaison officer for the Fourth Corps Area to the Washington Office. He will assist in general administration of the ECW project.

SHOW TROUPES MAY BE SENT AROUND CCC CAMP CIRCUIT

C. C. C. companies in the Second Corps Area are going to the theater this summer - and are going to see Broadway shows right in their own camps every week - if present plans work out for the routing around of theatrical companies organized in New York City by the Drama Division of the Civil Works Administration.

The Drama Division of the Civil Works Administration got busy a few months ago, hired a lot of actors, rehearsed a lot of plays, built scenery and everything, and proceeded to give shows in and around New York City.

Then George Junkin, director of the Drama Division, got in touch with Maj. St. John, Second Corps Area Welfare Officer, and things began to happen. A demonstrating or experimental presentation of three units in five camps in the Bear Mountain (New York) was arranged giving each camp one play or unit each week for a period of three weeks.

The first show was given on March 26 in Camp 44, the second in Camp 18 and next in Camp 50, all located on Bear Mountain. Each performance was to capacity and the experiment was a success beyond all expectations.

Now the plan is to extend the circuit throughout the eastern half of New York and New Jersey, routing around ten or twelve companies, each company playing in C. C. C. camps for a period of ten weeks before returning to New York City.

Whether the plan can be extended to other corps areas is now up for consideration. There are lots of unemployed actors in Chicago and in San Francisco and similar projects may be started in these cities.

If sufficient funds can be made available there is a good chance that all or most of the C. C. C. camps will get to see these same show troupes this summer. Which wouldn't be bad at all, would it? - From "Happy Days."

SEEDFALL UNDER A VIRGIN FOREST

By Leo A. Isaac, Pacific Northwest For. Expt. Sta.

Forest tree seed crops usually are classed as good, medium, light or as failures, but the actual number of seeds that fall per acre has always been somewhat of a mystery. Results obtained with seed traps on the Wind River Natural Area (typical of the Douglas fir type) furnish some interesting information on this subject. This forest is a mixture of Douglas fir, hemlock, cedar and true firs. In 1932 the seed crops on these species were classed as follows: Douglas fir - light, hemlock - medium, cedar and true firs - light. The seed fall per acre was at the rate of 166,200 seeds for Douglas fir; 4,039,000 for helmlock; 8,250 for true firs and 6,500 for cedar and others, or a total of 4,219,950 seeds per acre. It is evident that in 1932 over four million seeds per acre were available for restocking this area (if cut) even though the seed crops were not heavy.

These figures certainly exemplify the saying that "nature is a wasteful seeder", for in the undisturbed forest similar seeding goes on year after year and probably not more than four of the four million seeds that fall annually actually mature trees.

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>
> Theodore Roosevelt

Vol. XVIII No. 11 Washington, D. C. May 21, 1934

POROSITY AND WATER ABSORPTION OF FOREST SOILS

(Summary of an article in Journal of Agricultural Research, June 1, 1933)

By John T. Auten, Central States For. Expt. Sta.

The protective influence that forests exert on soil conservation and erosion control is generally recognized, but the relationships between forest litter and soil density, porosity, and water absorptive capacity have been less clearly understood. The changes in soil structure and site productivity that take place after transition from forest to field conditions, and the influence of these changes on tree regeneration and growth, have been little appreciated by those engaged in reforesting waste lands.

To arrive at a better understanding of the relation of soil to the problems of forestry and to determine the influence of forest cover and forest litter, a series of studies has been undertaken, out of which the study of soil porosity and capacity for water absorption was chosen for immediate investigation because of its important bearing on the problems of erosion, flood control, and water conservation, as well as its relation to the successful establishment and maintenance of forest plantations. To determine the contrasting conditions of forest and field soils, a comparison of these characteristics was made in four distinct phases, as follows: (1) old-growth forest soil with open-field soil; (2) second-growth forest soil with open-field soil; (3) grazed with ungrazed second-growth forest soil; (4) forest-plantation soil with open-field soil.

Porosity of Forest and Open Field Soil. From among the very few timber stands in the Central States undisturbed by cutting, grazing, or recent fire, 22 old-growth forest areas were carefully selected in Ohio, Indiana, Michigan, and Illinois. Adjacent field sites were chosen as near the forest as possible, at the same elevation, with soils originally of the same type. Some of the fields had been recently cultivated, others were in sod. Every effort was made to secure paired areas where the change of soil conditions from forest to field could be compared fairly.

Twenty soil tests for apparent specific gravity, or air-dry weight divided by a constant volume, were taken on each area, 10 in the forest and 10 in the adjacent field. Soil samples were taken to a nine-inch depth. All surface litter and duff were removed from the forest site in order that the comparisons might be made purely on the basis of mineral soil.

When the specific gravities of the different soils were tabulated and averaged, it was found that, in the upper 9 inches the average field soil was 15.3 percent heavier than the average forest soil. In other words, the upper 9-inch layer of the average field soil was

15 percent more dense and therefore relatively less porous than the average old-growth forest soil. The difference may be as much as 30 percent in certain areas. Similar tests conducted in 36 second-growth forest areas in Ohio gave practically the same results. Apparently soil porosity is not lost by cutting provided that forest cover, forest litter, and natural forest conditions are maintained.

The question naturally arises, To what depth does the greater porosity of forest soils extend? Does the difference occur only at the immediate surface or is it distributed throughout the entire 9-inch profile? This point is significant in the survival of tree seedlings, because if the porosity extends to any considerable depth, seedling roots will be able to penetrate much easier and the percentage of survival will be greater. The important question as to difference in water-holding capacities of forested and cultivated areas would be clarified by knowledge of the extent of looseness below the surface.

To settle this question, specific-gravity tests were made in each of three successive 3-inch soil layers in old-growth woods and adjacent field sites. The upper 3 inches of the average field soil was found to be 43.13 percent heavier than the similar soil layer of the average old-growth forest site adjacent. This difference is based entirely on the mineral soil below the litter and duff accumulation. Similarly, the average density of the 3 to 6-inch soil layer was 12.29 percent greater in the case of field soils. In the 6 to 9-inch layer the difference in density was negligible.

From these comparisons it may be seen that the greatest difference in density between old-growth woods soil and field soil is in the upper 6 inches. But although the lower layer shows no difference by apparent specific gravity measurements, water-absorption experiments show that the lower layer absorbs water much more rapidly in woods than in field soil.

Water Absorption of Forest Soils. As a corollary to the measurements of apparent specific gravity, a series of water absorption tests were made in old-growth forest areas and adjacent fields. Brass tubes, 2 inches in diameter and 12 inches long, were forced into the soil to a constant depth of 3 cm. This depth proved sufficient to insure that the water would not flow up around the end. The rate of water absorption from these tubes was measured at the depths of 1, 3, and 8 inches.

The relative rates of water absorption in forest and field soils strengthen the conclusion drawn from the density measurements, that forest soils are more porous than field soils. At the 1-inch depth the forest soils absorbed water 50 times as readily as did the field soils; at the 3-inch depth the absorption by forest soils was nearly 15 times as rapid; even at the 8-inch depth, where no difference in soil density was apparent, absorption by forest soils was more than twice that of the field soils. Although these figures are only relative, they clearly indicate the tremendous water-holding capacity of a forested area in contrast to the resistance to absorption and therefore the rapid run-off from cleared lands.

Soil Porosity of Grazed and Ungrazed Woods. Nine second-growth forest sites were selected as typical of grazed and ungrazed woodlands. The grazed areas were in the last stages of forest degradation with only a few old trees, no reproduction, and a ground cover of weeds, grass, and sod. The upper 9-inch layer of the average grazed woodland soil was found to be 15 percent heavier than the corresponding soil section in an adjacent similar ungrazed area. Excessive pasturing not only prevents tree reproduction but also makes forest exhaustion inevitable through compaction of the soil. The grazed soil is harder, holds less moisture, has poorer aeration, and its general tilth is much deteriorated.

Soil Porosity in Forest Plantations. The final phase of the soil porosity study deals with forest plantation sites. Does soil porosity return to old fields after planting? Thirteen forest plantations from 12 to 60 years of age were measured for soil porosity and compared with adjacent field sites. The difference in weight of the upper 9-inch layers showed that the field soil averaged 13.6 percent heavier than similar layers of adjacent plantation soil. This difference may be considered to represent a gain in porosity since planting. Field observations show that as soon as a litter is established under a planted stand of trees the soil becomes more porous. The observation was also made that the soil of coniferous plantations gained more in porosity in a given time than did that of hardwoods.

Functions of Forest Litter. The influence of forest on soil is inseparably connected with forest litter, and the proper production and retention of adequate quantities and kinds of forest litter is dependent upon good silvicultural practice. In the Central States region the accumulation of litter is seldom more than 1 inch in depth. The leaf fall decomposes rapidly and adds its fertility to the soil. The forest litter is, however, of great importance in this region even though it does not accumulate to a great depth. It serves as an absorbent, acts as a mulch or insulation against rapid evaporation, prevents compaction of surface soil by impact of rain, decomposes and furnishes plant food, and serves as a medium for microbiological activities.

Structure of forest soil has been developed through long periods of time. Root penetration, expansion and contraction with changes in temperature and moisture content, and activities of worms, insects, and animals, tend to make soil porous. The forest is a builder and a preserver of soil porosity. The penetration of roots and their eventual decay leave the soil interpenetrated with tubelike cavities. The process of cropping, on the other hand, ultimately decreases soil porosity and favors erosion. The porosity preserved in forest soils by the covering of litter is largely lost in field soils by impact of rain and by the silting and alluviating action of percolating waters.

When the Central States region was settled originally, both good and poor lands were cleared and cultivated. The accumulation of organic matter in the form of incorporated and unincorporated forest litter afforded a temporary supply of plant food, and even the poorer, shallow soils produced well for a time. Then this food supply became exhausted and the land ceased to yield a reasonable return for its cultivation. As the organic matter was oxidized, plant food leached away, and the top soil eroded, the land became increasingly unproductive. The impoverishment under agricultural use of originally fertile forest soil became a major factor in the growth of land abandonment.

MORE ABOUT UNIFORMS

By John G. Clouston, Umatilla

While P. A. Thompson's uniform iron is hot, let me strike a blow in behalf of the crusade.

Some time ago I commented on the uniform situation, emphasizing the necessity for a prescribed outfit which would be worn at all times on duty. As the situation exists, there are so many optional features that we have no uniform at all. Better that we wear clothing to our own individual taste and be an un-uniformed service than be the way we are. Far be it from me to want to doll up like a doorman with service stripes, rank insignia and shiny buttons, but here is one who will wear what is prescribed even if it has pink patches and yellow seam stripes.

When it comes to personal adornment, we humans are peculiar beings. We think we know the kind of things we ought to wear to enhance our natural attractiveness, but I have noticed that most people look well in any decent clothing that is well-fitted. A few of us, of course, wouldn't look well in anything. After all, isn't that at the bottom of the whole uniform controversy? "How will I look to others?" The answer is, "Fine, if your uniform fits."

As to specifications, I think we of the rank and file need not fear that something unsuitable will be chosen. One uniform for field and one for office wear, as Thompson suggests, I think is essential. But at least, if we are to have a uniform - and I have come to believe that we should - let it be a uniform and not a heterogeny of individual tastes.

So in support of Thompson's "Bulletin" article of April 9, I join in his plea to John D. Guthrie and others to please start something.

ECONOMIC SELECTION AND HIGH GRADING

By I. V. Anderson, Northern Rocky Mountain For. Expt. Sta.

In a recent issue of the Service Bulletin, Brandstrom defines economic selective logging as a system of logging and management that "rests on an economically sound procedure." What is economically sound procedure? A wide divergence of opinion upon this point among foresters and lumbermen is largely responsible for the numerous interpretations of economic selection . Nor can we say that this divergent viewpoint is not justified. Surely a system of cutting in a ponderosa pine forest in public ownership, based upon the economic and social welfare of the present as well as future generations, will vary materially from the cutting system in a privately-owned forest which is devised to yield the greatest net return for each acre logged. Yet, both may rest on economically sound procedure.

Perhaps our thought is not uniform regarding "economically sound procedure." However if we accept Brandstrom's qualifying statement, which says: "It removes---trees which are financially mature and conserves until maturity trees financially immature," a form of "high grading" will result. It will, however, in no sense be ruthless, wasteful, or conducive of high fire hazard if applied to the ponderosa pine forest of the Inland Empire. It has one failing. Deterioration of the stand will result to a limited extent. Douglas fir and larch, companion trees of the pine, cannot be classed as financially mature at present. Consequently, they must be left in the residual stand as a serious competitor of pine. There are also a few defective pine long passed financial maturity whose removal will never be profitable. Then there are always from 2 to 5 sound pine trees per acre above the profitable size limit that have never attained financial maturity nor can they ever attain that state because of inherently poor quality. Silviculturally these are the problem trees of the stand. Removal, without utilization, of the sound fir and larch for silvicultural reasons would be ruthless waste. Elimination of the problem pine would be stand improvement, and can be accomplished by girdling or felling at a cost below the loss incurred in logging these trees under present market conditions. Such a practice is economically sound to the custodian of the public forest but not to the owner of private forest land whose "rugged individualism" recognizes no economic or social obligation to posterity.

WHAT VISITORS TO THE U. S. A. THINK OF THE CCC

By Chaplain Stanley J. Reilly, 1st Lieut. Chaplains-Reserve, Eugene, Oregon, District

It is impressive to read what visitors to the U. S. A. have to say about the C.C.C. One official from Canada on a recent visit to San Francisco was interviewed on this subject of the young men of Canada during depression times. He promised that Canada would soon operate a C.C.C. program. He gives credit to the U. S. A. for the striking success of this gigantic project. For some time now Germany has been housing the young people in camps, establishing a busy world for them.

A London correspondent reports on the efforts of England in this project now so excellently carried out by President Roosevelt. The places are called "reconditioning centers." Members are classified by school work and physical qualifications. Then the boy is placed in the 1st center for a period of three months. If he shows any skill in any trade he graduates for a six months tour of training school work. There is a constant turnover.

About 2500 members are drafted from the depressed areas. They are provided with a pair of boots and trousers--which they may retain at end of period--and about 75¢ a week spending money for the camp store. This makes for the purchase of indoor games, promotion of outdoor sports.

The casual reading of the original article provokes a smile of justifiable pride in our President's C.C.C. accomplishment. We are pioneers in the youth of a nation movement which is now being carried on in other lands. We are away and above the other nations in this singular experiment. The size of it is seen in the cost of winter supplies of clothing --10 millions.

With the size of this program comes the increased possibility of failures and yet, to the credit of the Army and Navy guardians of camps, is the "striking fact" of its orderly progress, contentment, health. There is another feature of the American C.C.C. worthy of note, that through the work of each member, relatives are paid the salary of $25 each month. This money is earned, not donated.

It is to be remembered that each camp of the C.C.C. has been a lever in holding up the earnings of the little towns and cities in this neighborhood. Each boy will receive about $5 for spending money. He does not have to spend it in the camp store. As a matter of fact most of the 3-C money finds outlet near the camp in the theatres and stores. The 3-C in U.S.A. is a sort of double-edged sword to cut the depression and idleness among the young. The experiences of the directors of the 3-C in U.S.A. are being digested by European observers so that the other nations will quickly establish the same excellent program. -

From "Happy Days."

AFTER TWENTY-EIGHT YEARS!

Those who work in forestry seldom know when results are obtained. Recently Raphael Zon of the Lake States Forest Experiment Station, received a letter, full of human interest, which shows that sometimes and under some circumstances, far-reaching results are obtained. A portion of this letter reads as follows:

"In your letter to Mr. Wagner you say: 'As a person grows older, any worthwhile mementoes of the long gone past assume especial attractiveness.' Well, I am now 70 and one of the red-letter days in my memory is that warm October day in 1904 when Mr. Weigle, yourself and I walked over the old farm woodlot, and on a mile or two farther west where men were at work cutting off a tract of natural growth timber, mostly good white oak, such as is hard to find today. I memorized a few things that day that have been of tremendous importance to me. At that time the farm woodlot was included in the cow pasture. No young trees were coming on. You showed me where the tulip poplar and other seedlings were cropped off by the cows. Lesson No. 1. No seedlings can ever grow big if the terminal buds are cropped off.

"In the spring of 1905, 17 acres were fenced off from the pasture and no cattle have been allowed in the woodlot since that time. You should see it now. A find stand of young growth has come in with tulip poplar largely predominating, some of which are now 8 and 10 inches in diameter and 40 feet and more high. In the spring of 1913 we commenced to plant pine trees on a 5-acre tract on the east side of the farm, most of which is too steep to plow and cultivate properly. We have planted from a few hundred to a few thousand every year since, mostly white and red pine, a few Scotch, Corsican Ponderosa, Douglas fir, Austrian, Bald Cypress, and Arborvitae.

"In 1912-13 we cut most of the old Tulip poplar and some of the oak, which we used to rebuild the old farm house. We had enough Tulip for siding, sheathing and roof boards, and oak for the floors and finishing. We bought only the doors and windows and asphalt shingles. We have a good plain farm house, with bathroom, electricity, refrigerator, running water in kitchen.

"This farm reforestation has been my hobby now for more than 20 years. There are acres and acres of idle land in my township that should be planted to young forest trees. Some of the 4H club boys and girls are beginning to plant a few."

YE EDITOR DISCOVERS

In the present and prospective economy of the Nation, the planned use of lands is and will be a major factor. That fact is evidenced by the many Governmental agencies now giving attention to the subject. It is, of course, an important element in the program of the National Planning Board; it is a primary feature of the work of the Subsistence Homestead Division, the Federal Surplus Relief Corporation, the Soil Erosion Service, the Biological Survey, the National Park Service, the Tennessee Valley Authority, and the Forest Service. Reconciliation of the plans, programs, and objectives of these different agencies, their correlation into workable measures susceptible of application to a given territory, entails a vast amount of interchange of information, of compromise and agreement, and of coordination.

Even in the Forest Service itself, the subject presents many ramifications. The Branch of Public Relations is concerned with that part which relates to State Forests and private forestry; the Branch of Research is deeply interested in all phases of land economy which either directly or indirectly involve the use of soils for timber production; and the Branch of Lands, in development and action upon programs of land acquisition under the Weeks Law and the Clarke-McNary Law, necessarily must give consideration to the general consequences which will follow extensive land purchases by the Federal Government.

This situation creates need for effective correlation within the Forest Service itself, frequently for adjustments between objectives which are not mutually compatible. In dealing with other public agencies, the Forest Service necessarily must act as an entity and avoid proposals, recommendations or representations which are inconsistent with each other.

To meet this situation most effectively, the Forester has designated a clearing house committee within the Service for matters dealing with land planning, with the expectation that all Forest Service plans, proposals, programs, or policies in relation to planned land use which are to be submitted to other public agencies for consideration or integration with other land planning movements shall first be harmonized by the clearing house committee. As designated by the Forester, the committee consists of L. F. Kneipp, Chairman, R. E. Marsh, and Fred Morrell.

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The new personnel policy announced by the Forester on April 13 gives the Forester's Office the right of eminent domain on all personnel in the Regions for filling new positions and other openings. The objective back of this is not only to provide experienced personnel for these positions but also to give the men in the Service opportunities for promotion rather than filling these openings by new recruits from the outside. This will result in long distance transfers, primarily from West to East, in a good many instances.

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During his recent detail to the Washington Office of Operation, Assistant Regional Forester Merritt analyzed the first report of the Director of Emergency Conservation Work and found that a CCC worker cost the Government $6.61 per work day. This is, no doubt, a conservative figure, as it is based on the number of days actually worked to September 30. This figure does not include "contributed time" by Army and other Government employees. Photostat prints giving greater details on which this cost figure is based are being sent to each Regional Forester.

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The Forester has approved the consolidation of the Lemhi National Forest in Idaho with the adjacent Salmon and Challis Forests

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"In the few days I have been here I have made a startling discovery - startling because many of our boys are from South and West Chicago - that most of these boys want to take public speaking, music and dramatics and a large group are interested in politics and current economic problems," writes the camp educational adviser in a Middle-Western CCC camp.

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At the Conservation Conference held at Los Angeles, California, on March 23, a motion was unanimously adopted expressing appreciation to the California Forest Experiment Station for its sincere and energetic efforts in preventing disasters in fire and flood, and also expressing appreciation for its cooperation and help in making the Conference a success. The Conference, which was called by the Conservation Association of Los Angeles County, was attended by some 150 representative conservationists from all over the State of California.

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The 1180 acres given as the area of the Wind River Natural Area and Experimental Forest in the April 23 issue of the Bulletin is the acreage of the Natural Area alone. The area of the Experimental Forest, within the boundaries of which the Natural Area lies, is actually 10,350 acres.

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Robert S. Campbell, of the Southwestern Forest and Range Experiment Station, has been transferred to the Washington Office as Senior Conservationist in the Division of Range Research. He will have charge of the emergency program being carried on by that division.

NATIONAL FOREST RESERVATION COMMISSION APPROVES NEW PURCHASES

Expansion of National Forest Purchase Units on the headwaters of the Tennessee River in the Southern Appalachian area by over 3,000,000 acres was approved by the National Forest Reservation Commission on May 10. A new Purchase Unit was established in the southwestern corner of Virginia, comprising a gross area of 658,000 acres in the upper drainage of the Clinch River, a tributary of the Tennessee. It is to be called the Clinch Unit. Four other large units lying in Tennessee, North Carolina and Georgia will be added to the Unaka, Nantahala, Cherokee, and Pisgah National Forests. While the gross extent of the purchase areas approved is 3,227,000 acres, only about 2,326,000 acres have been classed as purchasable as the wooded lands are interspersed with many small fertile valleys and farms, and developed areas.

Three-quarters of a million acres of land already optioned was approved for purchase for National Forests in the eastern half of the United States. Purchases were heaviest in the Lake States Region, aggregating 319,625 acres. In the Ozark and Central Mississippi section, including Missouri, Illinois, Arkansas and portions of Oklahoma, 194,098 acres were approved. Purchases given approval in the Southern Pine belt totalled 165,704 acres. In the Appalachians 69,539 acres, and in New England, 12,193 acres. In Puerto Rico, 1,027 acres were approved. The average price of all purchases was $2.45 per acre, higher prices prevailing for lands carrying good stands of timber.

The Commission also approved a new method for acquiring State owned lands within the National Forest Purchase Units in Michigan. Instead of paying cash for such lands, the United States will purchase privately owned lands of equal value situated within State Forests and then exchange them for the State lands suited for Federal ownership. This arrangement will not only consolidate the Federal properties but correspondingly will build up and develop the State Forests and thus increase the acreage of forest lands placed under systematicpublic control and management. If the procedure is thoroughly effective in Michigan, its extension to other States may become practicable.

NEW SCHEME TRIED ON BEAVER

Fur-bearing animals seem to be holding their own, and if anything the beaver are a little on the increase. It has always been customary for farmers, land owners, etc., when the beaver dam up their roads, trails, ditches, etc., to secure a permit and trap them. O. W. Daggett of Red Cliff requested Ranger Schaal to try out a scheme of his on the Homestake Road where the beaver were persistently damming up a culvert and blocking the road. This consisted of opening the culvert or dam as the case might be, then taking some old gunny sacks soaked in used engine oil and suspending them over the water at the point in question, just so the oil-soaked burlap touched the water. It works 100 percent, and the beaver make no further attempts to dam that particular spot. This system used generally should do away with this permit to kill almost entirely. - From 1933 Fish and Game Report, Holy Cross Forest

APPRECIATION

Professor Thom of Princeton spends his summers on the Shoshone and Custer National Forests in geological studies which are being conducted under the auspices of a scientific group sponsored by twenty-three American and four European Universities. He recently called at the office of the Forester to express the appreciation of himself and his associates of the many courtesies and acts of cooperation which they had received from Forest Supervisors J. N. Langworthy of the Shoshone Forest and Walter J. Derrick of the Custer Forest. In doing so he expressed the opinion that probably kicks against Forest Officers and criticisms were frequently brought to the Forester's attention, but that good service and helpful cooperation too often were taken for granted by the recipients, whereas it was just as essential that the Forester should know about them as about the deficiencies of field administration.

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Vol. XVIII No. 12 Washington, D. C. June 4, 1934

RANGER JONES SAYS

Dear Editor:

Well, I see one of the supervisors has a leading article in the Bulletin about that threadbare subject, uniforms. I don't mean the uniforms is threadbare but the subject is. I was kind of surprised because personally I've been so busy with CCC camps, Nira projects and lately trying to keep up with the lumber code along with all my regular work that I've hardly noticed that my uniform pants need pressing. When I've had any spare time I've thought it was more important to do some reading on up-to-date things like the Copeland Report than to be worrying about my clothes. And I've only reached page 1,589 at that.

Some rangers and supervisors seem to be situated different from me or have another slant on things. Anyway an article on uniforms crops up every now and then. Most of them tell about some humiliating experience they've had in being mistaken for a stage driver or traffic officer or what not. Well, I say what of it? Suppose a ranger is taken for something else once a year, is that going to crush the spirit of the Forest Service? I've been around in a uniform more or less for twenty years and it's never happened to me. Anyway, when you come to figure on what could be done about it, the only thing I can see would be to have a uniform which couldn't possibly be mixed up with any other kind of uniform, in the woods or in the towns and cities, because these experiences they write about may happen anywhere. And when you think of it there are lots of different kinds of uniforms. It seems to me that would just have to be done if we set out to make sure that none of our supervisors or rangers would ever be embarrassed in that way again, because it's pretty sure there's always going to be dumb people around who can't make fine distinctions.

Well, of course, such a thing could be done. I can think of combinations of color, shape. cut, etc., which I don't believe any other outfit would ever think of wearing. But when I think of myself in one of them and walking down the street in my town and doing business with sheep herders and loggers, that's something else.

Well, anyway, as I said, what of it? I've met quite a few stage drivers and traffic policemen in my day, under ordinary circumstances and special circumstances, and so far as I can see they are pretty good people. Personally I'd not feel terrible bad if someone mistook me for one of them. Of course we don't know, sometimes somebody may mistake one of them for a ranger or supervisor and maybe they feel just as bad about it as some of our boys do. As a matter of fact it's occurred to me several times, when I've read some of these articles speaking of traffic officers and stage drivers, that if I was absolutely sure that I was doing my job half as well as most of them do theirs I'd feel pretty doggone good about it. So long.

BILL JONES

FOREST SURVEYS AN AID TO SUSTAINED YIELD PRODUCTION

The lumber industry under Article X of the Code, has committed itself to sustained yield. The first step toward sustained yield management of forests is knowledge of the amount of timber by different sizes, loss through fire and cutting, and growth. As a concrete example, an area around Munising in the Upper Peninsula of Michigan may be cited.

The pulp mill at Munising consumes some 50 thousand cords annually and the sawmill and woodworking plant an additional 20 million board feet.

The area of forest land within the Munising unit is in the neighborhood of 450,000 acres. The amount of standing timber of sawlog size is close to 2-1/2 billion board feet in addition to 443,000 cords of hemlock, spruce and balsam pulpwood.

Because of the preponderance of old growth and recently clear-cut land, the present growth of hardwoods averages only about 67 board feet per acre or 20 million board feet in all -- just enough to meet the present requirements of the sawmill and woodworking plants in the unit. Under selective logging, this area should yield 160 board feet per acre, or 50 million board feet -- 2-1/2 times the present needs.

There are being grown in the swamps and in mixture with the hardwoods some 28,000 cords of pulpwood, spruce, balsam and hemlock, a little more than half of the requirements of the local pulp mill. However, since some of the hemlock sawtimber, as well as slabs, also can go into pulp, the requirements for wood pulp can also be nearly met by growth from the same area.

These facts indicate that the Munising area can be made self-sustaining and with proper treatment can even permit an enlargement of the sawmill industry. Without these facts, there is no basis upon which to plan self-sustained production. - Technical Note, Lake States For. Expt. Sta.

C. C. C. CAMP HAS OWN NAVY

By Fred L. Foss, First Sgt. Co. 796

Company 796, Pierre, S. Dak., is believed to be the only C.C.C. camp which is completely surrounded by water, and which operates its own "navy."

The camp is located on an island in the middle of the Missouri River. The only way of entry is by the current-operated ferry.

The camp itself is neatly laid out in the form of a semi-circle. The recreation hall includes the post exchange, barber shop, library and tables for games, piano, and other comforts. The camp laundry is located in the rear of the hospital building, and also the power plant, operated under the supervision of the "Superintendent of Utilities."

Under Engineer L. E. Howe, the company completed a dam which Co. 1743 was working on before it left for Lake Contrary, Mo. This dam is 600 feet long, 31 feet high and has a 32-foot top. It contains 50,000 yards of dirt and has two spillways. The primary spillway contains 100 cubic yards of reenforced concrete. It is 20 feet wide and 19 feet high and carries eight feet of water. The face of the dam is rip-rapped with one-foot thick native rock. This dam backs up 40 acres of water.

The island on which the camp is located is being made into a State Park and contains approximately 1,500 acres.

On the northeast end of the island Co. 796 is building a dyke across the north channel of the river to the mainland, to be used as a causeway. When this is completed, it will contain 16,000 yards of rock, dirt, and brush, and will be 1,325 feet long. The face is protected by willow bundles laid in shingle fashion. This dyke will make the island accessible to the mainland.

One of the main projects of the outfit is the reforestation of the island by the planting of approximately 65,000 young trees, including Chinese elm, Scotch pine, Austrian pine, hackberry, honeylocust, soft maple and cedar.

In about three weeks, the outfit plans on planting its own garden which will cover about 45 acres, with the intention of having a full line of vegetables - plus about eight acres of watermelons. - From "Happy Days"

FOREST FIRES CRIMINAL OFFENSES

I don't think we fully realize that forty-three States and the Territory of Hawaii have statutes making negligence or carelessness with fires a criminal offense, and seventeen States make tobacco fires specific crimes. There is a special admonition in the tobacco statutes for both men and women who contribute to the expensive radio and other advertising of pleasures that are "kind to your throat" with "not a cough in a carload" nor a "nail in your casket".

Maybe these admonitions with a "ruler up their sleeves" or a jail in the offing to be careful with fires, with the lighted match, the half consumed cigarette and the heel from the old briar, released against a tree or stump to burn out in the grass or woods instead of in our hind pockets, will be better heeded in time, and reduce the 94.4 percent of man-caused fires we still have in the woods. We have lots of law on the subject. Maybe we haven't enough jails and padded cells. - John H. Hatton

EFFECT OF DENSITY OF STAND AND OF GROUND COVER ON HEIGHT GROWTH OF LONGLEAF PINE SEEDLINGS

An inverse ratio exists between height growth of longleaf pine seedlings and the number of seedlings per acre, and also between the height growth and the density of the ground cover of grass and brush. These, in brief, are the preliminary results of investigations now in progress at Bogalusa, Louisiana, on 12-year natural reproduction of longleaf pine.

Three different methods of treatment were used:

1. All the grass removed, leaving only seedlings thinned to desired densities (denuded plots).
2. Grass remained undisturbed, all scrub oak removed and seedlings thinned to desired densities (undenuded plots).
3. Both grass and oak undisturbed, but seedlings thinned to desired density (check plot).

Density of stocking varied from 1,000 to 100,000 seedlings per acre in the first two groups of plots, and was 5,000 per acre in the last plot.

The increase in height growth of the seedlings on the 1,000 per acre plot which was completely denuded except for pine was 8 times that of the seedlings on the undenuded plot of the same stocking. The ratio of increase of height growth of seedlings on denuded to those on undenuded plots for various densities of stocking was as follows: 5,000 per acre, 2½:1; 10,000 to 100,000, 2:1.

The relation of increase in height growth to number of seedlings per acre on the denuded plots, considering the growth of the seedlings on the 100,000 per acre plot as 1, was as follows; 1,000 per acre, 17½; 5,000, 4; 10,000, 2½; 15,000, 2½; 25,000, 2; 50,000, ½. That is, the seedlings on the 1,000 per acre denuded plot grew 17½ times as much in height as those on the 100,000 per acre denuded plot, and so forth. Similar ratios obtained on the undenuded plots. The check plot seedlings grew least of all.

REMOTE AREAS TO BE SURVEYED FROM AIRPLANES

About 20,000 square miles probably will be surveyed or photographed from the air by the Forest Service this summer. In some cases maps will be made from the photographs, and for several areas these are expected to be the first satisfactory maps ever made.

It is planned to photograph from the air certain National Forest and other areas in which the Forest Service is carrying on work in connection with the timber survey of the United States and the studies of the use of submarginal land. In many cases the photographs, after being supplemented by work on the ground, will be compiled into maps. The work in the northern Rocky Mountain region will be coordinated with detection of forest fires. Other varied uses of the air surveys will be for laying out fire protection systems, location of projected roads, trails and improvements, and location of types of timber and forage.

Between $40,000 and $50,000 will be used in making the photographs. All the work will be done by contract.

Single-lens photographs will be taken at intervals of approximately 1 mile, and have 60 percent overlap, along the line of flight, so that they may be readily pieced together or used for the extension of control. From these, maps produced eventually on a scale of 1 inch to the mile are sufficiently accurate for most forest administration purposes.

AN IMPOSTOR

The National Bank at El Paso, Texas, has advised the Washington Office as follows:

"A party representing himself to be N. H. Pulver left with us on April 30, 1934, a check of $2,500.00 drawn on Washington, D. C. This check was returned 'no account' and we also have a letter from the Washington Loan & Trust Company of Washington, D. C., advising that this party had opened an account with them in March 1932 with a check of $3,500.00 which was returned unpaid.

"This party represented himself to be an Inspector of the U. S. Forestry Department, Division of C. C. C., and claimed that he had been travelling in various C. C. C. camps on inspection tour."

This man is not connected with CCC inspection work.

GROUND WATER: ITS IMPORTANCE AS A NATURAL RESOURCE

(Extracts from an Article by E. E. Haslam in Pennsylvania Department of Forests and Waters Service Letter)

It is raining or snowing somewhere on the earth's surface all the time; 16,000,000 tons are falling every second, and there must be a like amount evaporating every second to maintain a balance. Otherwise the accumulation of water on the land would dwarf Noah's experience in the Ark to insignificant proportions.

Of the earth's surface about three-quarters are covered with water and one-fourth is dry land. Water is evaporating from the land and the various lakes and rivers all the time and a greater volume is vaporizing from the ocean.

This process is endless. First, evaporation occurs from earth and ocean to change water into water vapor, which is 130 times lighter than dry air. By expansion the vapor rises to meet cooler air, where the vapor is condensed to form clouds which are borne by the winds, for miles and miles, over land and sea to be precipitated in the form of rain, snow, and hail, and distributed over the earth's surface. The water finds its way to our lakes and streams and flows onword to the ocean, completing but one round of a ceaseless cycle. * * *

What becomes of the rainfall which reaches the earth? In general a part of it is directly evaporated into the atmosphere, a part flows from the ground surface to increase the runoff in streams causing freshets and floods, and the rest seeps into the soil and rocks, slowly reaching outlets in springs and streams.

The water which enters the ground is held for three distinct purposes:

First, a small amount is constantly retained as moisture and occurs in all soils as a thin film surrounding each particle. It does not move, cannot be driven out except by intense heat, and cannot be absorbed by plant roots to be of any practical value. Like the pilot light on a gas range, it is nature's provision to keep the soil moist so that other functions may operate. Plants must obtain water in an amount one and one-half times greater than this natural moisture content or the vegetation wilts.

Next, the upper soil contains that water which has important relations to agriculture and which is used by all plant life. It partly fills the pore spaces in the soil, where it is held against gravity by the mutual attraction of soil and water for each other. It cannot be drawn out by drainage, but moves to the plant roots because of the same action which draws oil up the wick of a burning lamp.

This capillary action is capable of drawing water from a depth of eight feet to supply the needs of crops and vegetation, and thus a large amount is evaporated or breathed into the atmosphere. For instance, a beech forest consumes 1,200 tons of water per acre each year, while a single large elm during the growing season uses a barrel of water per day. Capillary water is therefore similar to liquid assets or currency in daily use for our convenience and subsistence.

When the soil is saturated the pores are entirely filled with water and that portion of the rain that is not required for vegetation passes downward under gravity to serve the third purpose, that of storing the excess water in the underground vaults among the porous sands, gravels, and sandstones where it is held as ground water. This water has reached a depth too far below the end of plant roots to be drawn upon and thus is available for water supply and to maintain stream flow. Secure from evaporation losses, it is similar to our gold reserve and, although subject to seasonal fluctuation, is replenished every year.

The importance of ground water, while neglected for many years, is now receiving the attention it deserves. * * *

The flow of ground water is similar to that through sand filters, but the top of the water-table is not level, for, due to irregularities in surface and sub-surface conditions, its slope recedes from or approaches the natural ground surface giving rise to various phenomena.

The low water flow of streams in summer seasons is supplied entirely by ground water and conditions favorable to its storage and delivery are essential to the maintenance of dry weather flow. Streams habitually dry indicate that little ground-water storage is afforded on their watersheds. To develop projects for public water supply, navigation, or water power to the maximum practicable extent it is necessary to have adequate underground storage to smooth out irregularities of stream flow. When average supply for the year from surface waters is equal to average demand, as usually occurs, we are secure, but during excessive droughts when surface storage is exhausted we depend on ground water alone.

In the sands and gravels of this region, the water table rises and falls every year a maximum of 10 to 12 feet, averaging from 6 to 7 feet throughout an area of 40 square miles, thus storing and releasing enormous volumes of water. The average rainfall is about 40 inches, of which only 45 percent runs into the streams, and the balance, equivalent to about 22 inches of rain, is required to meet the losses of direct evaporation, the needs of vegetation and ground water replenishment. The importance of ground water storage on this project is thus apparent. * * *

To meet the manifold requirements that arise in water regulation, the engineer must know the individual characteristics of ground water. This is not a simple problem for the elements include the principles of meteorology, geology, and hydraulic engineering based on information obtained locally by direct observation. In the final analysis, the success of any water development may depend to great extent on the reserve supply maintained entirely by ground water.

YE EDITOR DISCOVERS

Aside from those primarily of an emergency character, there are few subjects now receiving more attention by different agencies of the Government than that of land use planning and land economic adjustments. Fundamentally it affects the whole program of agricultural adjustment, the problem of what to do with that part of the population deprived of the opportunity for employment through mechanical developments in industry, the critical requirements of erosion control, and many other social complications that press for adjustment. Throughout all of its ramifications, forestry occupies a conspicuous position.

One agency which is attacking the land use problem is the National Planning Board of the Department of the Interior, which is working through a series of regional and State planning boards and whose outline of action comprehends practically all social and economic factors. Another approach to the problem is through the water resource study which for each of 62 hydrographic divisions would analyze all factors which influence the flow of streams and their use for all purposes of human service. Another agency deeply interested in the same subject is the Agricultural Adjustment Administration; another, the Federal Surplus Relief Corporation; still another, the Subsistence Homestead Division of the Department of the Interior; and still another, the Soil Erosion Service of that same Department.

One agency for the correlation of these various activities is the coordinating committee of the Federal Surplus Relief Corporation which comprises one representative of the corporation itself, one of the Department of the Interior, and one of the Department of Agriculture. The function of this body is to correlate the specific marginal farmland of the Federal Surplus Relief Corporation with the general situation as it is defined by the several agencies engaged in its consideration. More recently through the initial action of the Agricultural Adjustment Administration the entire continental United States has been divided into nine regions, each in charge of a regional assistant of the land policy section of the Department of Agriculture. In addition to their AAA activities these regional assistants also will represent regionally the Federal Surplus Relief Corporation, and they will be the men with whom the field organization of the Forest Service largely will deal in matters of planned land use within their respective jurisdictions.

On May 17 and 18 the Forester, Associate Forester, and Branch Chiefs devoted the afternoons to the problem of appropriation estimates and consideration of financial needs and plans for the fiscal year beginning July 1, 1935. At any time between now and the first of September the Bureau of the Budget will call for appropriation estimates to be submitted to Congress next winter. Despite the numerous uncertainties surrounding all financing of Forest Service work, the Service must be prepared with its own decisions and requests for presentation to the Department, Bureau of the Budget, and ultimately to the next session of Congress.

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Factual and realistic studies of land conditions in different States have given a new impetus to forestry. This analysis of such existing or prospective conditions slowly is creating a realization that continued agricultural use of large areas of land can have no result other than a wastage of human effort and hope, the slow destruction of the potential social value of the lands, and multiplying damage to other property through floods and sedimentation. In the search for other social or economic use of the lands, forestry with all its multiple services to humanity is frequently the obvious answer.

In consequence, many States have changed their points of view as to the desirability of Federal forest land ownership within their borders and are now advocating the establishment of National Forests where previously they opposed such action. They are, however, confronted with the requirement of the Weeks Law that no purchase can be made within the State until that State by action of its legislature has given its consent thereto. In some States there has been no legislative consent whatever; in others it has been limited geographically or quantitatively. Action upon new State proposals is not therefore legally permissible, and the State legislatures will not meet until January 1935 or later. To meet this situation, Senator Bankhead and Representative Hill of Alabama have introduced in Congress identical bills providing that the requirements of the Weeks Law will be met if the consent of the State is expressed by the Governor thereof in writing with the certification that the Governor has the written approval of his action from a majority of the members of the State legislative body. If such a bill is enacted, the establishment of new purchase units may become practicable within the next few months; otherwise their consideration may have to be deferred until the necessary consent is granted by formal legislative action.

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"Would you like to hear how your broadcast influenced the life of one boy?" a radio listener in Iowa writes. "Our youngest son, 18 years of age, was casting about last summer for a decision on what kind of college course to take up. After listening to your program several times, he said suddenly one day (at the conclusion of one of them), 'Mother, I've been thinking for some time that I'd like to study Forestry, - and now I'm sure of it! I am going to Ames College this fall.' And to Ames he went, - and, altho he is working very hard, getting his studies, and earning part of his living expenses, he says there isn't anything else in the whole world for him except Forestry - every phase of the subject, he finds so thrilling and interesting."

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The following bibliographies have been compiled by the Washington Office Library and are available for distribution:

Central States Forest Experiment Station, April 7, 1928
Communal Forests, June 15, 1928
Douglas fir, October 1, 1924
Forest Fire Insurance, October 18, 1928

Forest Taxation, June 1, 1925. Supplement, Feb. 28, 1928
Form and Taper, July 1, 1925
Public Finance and Taxation, March 20, 1928
Technique of Volume and Growth Studies, April 1, 1925
Thinning, November 1, 1924
Tree Surgery, May 23, 1928
Water Resources and Streamflow, September 22, 1931
Ponderosa Pine (Pinus Ponderosa), May 1, 1934
Windbreaks, June 6, 1928

Announcement will be made in the Bulletin as future bibliographies are issued.

RESULTS OF STREAMFLOW AND EROSION RESEARCH

The California Forest Experiment Station's surficial run-off and erosion plots located on the Sierra National Forest, North Folk, California, yielded, as a result of the January 1, 1934 storm, one of the most significant records so far secured from that installation.

The three pairs of North Fork plots, established in 1928 in the brush type consist of the following: one pair of undisturbed or "cover" plots; one pair denuded by fire in 1930 and on which the vegetation has since been allowed to return (the "once denuded" plots); and one pair burned over once in each of the following years: 1929, 1931, 1932, and 1933 - or continuously maintained in a denuded condition (the "repeatedly denuded" plots). The plots have an average slope of thirty-two percent; each is 10 feet wide by 108.9 feet long with an area of 1/40th acre.

For the New Year's storm of 2.92 inches rainfall, the cover plots recorded only 4 cubic feet of run-off per acre; the once denuded, 56 cubic feet per acre; and the repeatedly denuded, 1854 cubic feet per acre. The average ratio of run-off for the cover plots as compared to the denuded was 1 to 463.5. The erosion from the plots for the period was none (0.0 cubic feet) in the case of the cover plots, a trace for the once denuded plots, and over 50 cubic feet per acre for the repeatedly denuded plots.

The apparently small amount of erosion as compared to run-off, from the repeatedly denuded plots is due to the limited area included within the plot: the length of the plots does not permit the run-off to reach an intensity sufficient to produce serious erosion or gullying. - From California For. Expt. Sta. Monthly Report

N.G. $1.00 CHECK DOES $20.00 WORTH OF GOOD BUSINESS

A NSF (not sufficient funds) check for $1.00 did $20.00 worth of business recently before the final owner tried to get his money back and found that the check was not worth the paper it was written on. The man who gave it originally had flown the coop, and there was nothing for the endorsers to do but make good, which they did at the rate of a nickel apiece, there being twenty names signed on the back. The queer part of it is that each man sold $1.00 worth of goods with the check, out of which he made around 20 cents net profit, or a total of $4.00 for the 20 transactions. After each had paid his five cent assessment, he still had a net profit of 15 cents on his $1.00 transaction.

The question is, Who lost on the no good check?

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SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT. xxx THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XVIII No. 13 Washington, D. C. June 18, 1934

A NEW ERA FOR WILDLIFE MANAGEMENT

By Marvin Klemme, Routt

With the promulgation of the recent Regulations by the Secretary of Agriculture for the control of hunting and fishing on the National Forests, it begins to look as though Game Management is shortly destined to take a larger place as one of our major activities.

The possibilities in Game Management seem almost unlimited. Wildlife propagation and management on the public lands should be carried on to the utmost without working to the detriment of more deserving uses. Game propagation, because of the fact that it can be handled along with other administrative work, can be made to produce handsome revenues instead of being a public liability, as is the case in some instances now.

A complete detailed Game Management Plan should be worked up for each National Forest just as soon as sufficient information is on hand to justify it. This plan should cover the propagation, management and "harvesting" of big game animals, fur bearers, fowls and fish. In the case of the big game animals, probably the greatest obstacle to a successful plan is the problem of winter range. In many cases, in the high mountainous country of the West, there are considerable quantities of excellent feed that is not eaten by domestic livestock because of inaccessibility, etc. However, under existing conditions it may also have little value for big game range, because of the fact that adjacent winter range is not available. In a good many cases, before a successful big game policy can be put into effect, it will be necessary to acquire adjacent foothill areas for winter range, or, in certain other cases, acquire lands that lie within the line of migration to suitable winter range.

Intensive studies will show that certain areas should be stocked with certain animals or birds, and that in other areas probably these same species should be removed. Fish hatcheries that are operated by, or at least work in very close cooperation with, the Forest Service should be established. Probably one hatchery for each two National Forests would not be too many. A sufficient number of retaining ponds should be established on each Ranger District to insure the stocking, or restocking, of all suitable bodies of water, at the convenience of the officer responsible for the stocking of these waters. Streams should be regulated on a rotation basis; that is, a stream should be opened for a period of, say, three years and then closed for the same period. All bodies of water should be improved or developed for fish propagation as time and funds are available.

There are enormous possibilities in the propagation of the fur bearing animals alone.

In many cases the beaver could be managed so as to bring in more revenue than grazing or timber sales on the same area. Each National Forest could be divided into trapping allotments, similar to grazing allotments, and leased out on a percent basis. One trapper, whom experience had proved dependable would be placed on each allotment and anyone else trapping on that area would be in trespass. Certain areas would be stocked with certain species, breeding stock would be improved, females and "kits" protected, etc. Seasons would be so regulated as to harvest the fur crop at the proper time of the year. An excellent opportunity exists for the propagation of a number of species of wild fowls on some of the National Forest areas which are located at the lower elevations.

Any Game Management Policy should have as its aim the highest use of the land and should be worked in and correlated with the other uses so as to derive the maximum amount of use from a given area without any one use working to the detriment of the others. Areas should be kept fully stocked with suitable species of wildlife, and no specie should be allowed to increase in numbers beyond the carrying capacity of that area. A system of fees should be worked up for each National Forest that would correlate with that adopted on the other Forests, for the privilege of hunting, fishing or trapping on these areas. These fees should be sufficiently high to insure a reasonable profit, net, to the Forest Service, but not to the extent that it would encourage "poaching".

With the advent of the greater amount of leisure which seems assured to all, doesn't it seem logical that a successful Game Management Policy, efficiently administered, would be not only a sound investment financially, but a greater investment in human health and happiness?

"UNIFORM" VS. "FIELD CLOTHES".

By H. D. Cochran, R. 2

For a number of years I have read with interest and considerable personal feeling the contributions to the Service Bulletin on the subject of the uniform in the Forest Service. I have hesitated to express my opinion because it appears to place me in a hopeless minority. However, the temptation has now become too great and I find myself offering the Bulletin an opportunity to let me appear in print.

There are probably very few Forest officers who at one time or another have not had the experience described by Supervisor Thompson in the issue of April 9; which leads to the question, "Should we have a uniform?" I am referring to the term in the abstract and not to the characteristic suits worn by Forest Service officers. A "uniform" is designed primarily to be looked at. If it is to serve this purpose well, it should be impressive - with emblems and insignia. The most successful uniform is one that inspires respect, or even a certain amount of awe, and helps to surround the wearer with an atmosphere of glamour. It is of greatest value in organizations whose functions are most closely associated with emergencies - firemen, policemen, and soldiers - and whose success depends on strict discipline and formality. Above all, a uniform must be immaculate and must be worn with an "air." How does this fit the Forest Service? To be sure, the Forest Service meets emergencies and faces danger, as it has done for the past thirty years, and does it with distinction. The fact remains, however, that the Forest Service is a work organization. Work and not readiness to serve is the cornerstone of its tradition. I fail to reconcile my conception of the uniform with this conception of the Forest Service tradition. Therefore, I prefer to think of the outfit I wear on field trips as "field clothes," rather than a uniform. I prefer to think of it as a suit that will not be adversely affected by the type of work that may be required of me or any Forest officer on a field trip. I do not like to feel apologetic if it is not at all times perfectly pressed. The color and design are admirably chosen for such use, and the suit as we wear it is useful and makes a creditable appearance. If one merely drops the term and idea of a "uniform" and substitutes for it the idea and term "field clothes," it seems to me a lot of disagreement may be avoided as to the type of suit, and especially the type of trimmings, to be adopted. It is assumed, of course, that "field clothes" will be worn with the same regard for personal neatness as any other suit.

White linen coats are worn habitually by restaurant waiters, soda fountain attendants, barbers, dentists, and doctors. There is the same opportunity for confusion among these "MEN IN WHITE" as there is between bell hops, taxi drivers, Western Union messengers, and Forest officers, but, so far as I can see, without serious discredit to any of the classes involved. Each is important in its proper place.

I favor taking off the "uniform" and putting on the "field clothes," and wearing them as such with pride in the job that calls for them.

AN OLD STORY

Once in a while a glance back along the upward road of the Forest Service is worth while for the encouragement it gives. Things were a lot worse in "the good old days." Copies of early (1908) inspection reports by R. Y. Stuart are enlightening. They show vivid pictures of the beginnings of Service standards and traditions now so firmly established that no one thinks of them very much. Also that Montana stumpage prices are less rather than more than they were 25 years ago.

In these beginnings, there was the mystery of seven shovels on one Montana Forest, with the property record showing only five: Of course, other equipment was in proportion. There were no trucks, and no truck trails; no telephones, to say nothing of radio; and few horse trails. The Supervisor's responsibility for all work done on his Forest had not been clearly established, especially for the work of a crew (surveyors) temporarily there. Personnel was changing with bewildering rapidity. Even the location of the Forests was unknown, and for an eastern Montana Forest Stuart gave boundary surveys a priority second only to ranger cabin construction. "The boundary is at present indefinitely known and not defined. A small portion ..... was surveyed last year (1907) but the quarter line was used rather than the section line so that the surveying done is ½ mile too far east." The first proposed telephone line on this Forest was rated by Stuart below the need for ranger "camps," boundary surveys and a horse trail along the main divide. Note that Stuart put the care of Forest Service personnel first, even if our ideas of what constitute satisfactory quarters have changed radically.

The Montana Forests were doing a larger proportion of the timber business of the Service then than they are now. The Bitterroot had the Lick Creek sales to the Anaconda Copper Mining Company in progress. Stuart reported: "I find the standard of timber sales on the Forest excellent and commendable, attributing it mainly to the frequent inspection of Koch and White and an unrelenting effort to obtain good work from the purchasers. ..... In the first marking done the diameter limit was closely adhered to. It was soon found that a selection system was more suitable to the stand, particularly in the case of yellow pine. Succeeding markings under this system secured much better results." (The diameter limits referred to were 19 inches for yellow or ponderosa pine and 10 inches for fir). "Silviculturally the sale is a good one .... By careful marking a fine stand of young pine will remain to insure a stand of sawtimber in from 25 to 50 years. ..... I know of no better sale area. ....." But on one of the eastern Montana Forests things were not so good. "Timber sales are not very well in hand. Repeated change of rangers and the time necessary for the new rangers to become acquainted with the business on their districts has caused a lack of supervision of sales and very crude work. ... Sales of green timber have been made in inadvisable locations and the marking has favored the purchaser rather than the stand." And in regard to a specific case: "The stand has been culled previous to the sale, which cutting together with the cutting under the present sale has made almost a clear cutting. The marking was much too heavy. No sale of green timber should have been made from this site." This was about the time the Arizona ranger sold the seed trees left on a sale area by the "marking board."

So, if we think we are run ragged driving the car from job to job, remember that we drive; and if we do not know just how to mark the timber so as to get the very best results, the oldtimers had to do the job without knowing the importance of advance reproduction of ponderosa pine or having much knowledge of what the sale area was going to look like after cutting. If the burden of handling NIRA and ECW crews seems too much, remember that it is better than having no men to do anything and no equipment even if men were available. We can turn to today's job with a sigh of thankfulness.

PUBLIC LANDS STILL BEING ADDED TO NATIONAL FORESTS

Notwithstanding many other pressing demands on its time and attention, the present Congress has found it possible to enact six different bills making or authorizing public land additions to the National Forests. The record as of May 22, 1934, stands as follows:

National Forest	Public (Acres)	Private (Acres)	Total (Acres)	Approved
Ochoco	1,808	---	1,808	May 11, 1934.
Cochetopa	126,000	51,000	177,000	May 3, 1934.
Pike	2,760	4,600	7,360	May 3, 1934.
Boise	95,000	177,340	272,340	May 17, 1934.
Mt. Hood	4,798	---	4,798	May 21, 1934.
	230,366	232,940	463,306	

The Act of April 14, 1934, authorizes the President to add to the Fremont National Forest not to exceed 250,000 acres of public land. Just what total area will be added and the amounts of public and private lands respectively cannot of course be determined until the Regions submit the necessary reports.

While these additions represent only a small part of the 19,000,000 acres recommended for addition to the Forests in the report submitted in 1930 to the Committee on the Conservation and Administration of the Public Domain, nevertheless they block up a number of difficult reentrant areas and will facilitate National Forest management to a degree better than their proportional area. - L. F. Kneipp

PLANT THE GOOD SITES FIRST

By William G. Morris, Pacific Northwest For. Expt. Sta.

The practicability of planting the best sites first is demonstrated by 19 years of growth on 11,000 pedigreed Douglas fir trees produced and treated by identical methods on a variety of test plantations. These plantations were established on sites of quality II, III, IV, and V. The stock planted on each site was derived from the same seed trees, so that a comparison of the height growth on the different sites means comparison of stock with the same hereditary vigor and not a comparison of stock from entirely different seed sources. The test areas were planted with 1-1 nursery trees in 1915. During the first two years, trees in all plantations were of equal height. Since the 3rd year, the better sites have been drawing farther and farther ahead of the poorer sites in terms of tree height growth. The trees on site II grew as tall in 9 years as the trees on site V grew in 17 years. Similarly, the trees on this good site grew as much in 9 years as those on site IV in 14 years, and those on site III in 11 years. When the trees were measured after 17 years in the plantations, the average heights were 21.4, 16.9, 6.7, and 6.1 feet on sites II, III, IV, and V respectively. Thus, trees on the site II area were three times as tall as those on sites IV and V.

These records show that in terms of total wood growth it pays to plant the good sites in preference to poor sites, for quicker returns will be obtained if the good sites are planted first. In special cases, other values such as watershed protection may outweigh timber needs, and demand that a site IV be planted before a site II. But, even on watersheds there are a variety of sites, and a quicker cover of trees will be obtained if the best of the watershed sites are planted first. From the standpoint of timber growing, if a good site lies idle for 1 year while poor sites are being planted, the average yearly amount of wood which the good site would produce in a rotation period is lost forever. From the above data, it is conservative to say that one year of idleness for a site II section of land is a greater economic loss in the Douglas fir region than three years of idleness for a site V section.

SALESMEN OF KNOWLEDGE

By Glenn Frank

The future of America is in the hands of two men--the investigator and the interpreter. We shall never lack for the administrator, the third man needed to complete this trinity of social servants. And we have an ample supply of investigators, but there is a shortage of readable and responsible interpreters, men who can effectively play mediator between specialist and layman. The practical value of every social invention or material discovery depends upon its being adequately interpreted to the masses. Science owes its effective ministry as much to the interpretative mind as to the creative mind. The knowledge of mankind is advanced by the investigator, but the investigator is not always the best interpreter of his discoveries. Rarely, in fact, do the genius for exploration and the genius for exposition meet in the same mind. Many negro mammies of the South can make a strawberry shortcake that would tempt the appetite of the gods, but they might cut sorry figures as domestic science lecturers. The interpreter stands between the layman, whose knowledge of all things is indefinite, and the investigator whose knowledge of one thing is authoritative. The investigator advances knowledge. The interpreter advances progress. History affords abundant evidence that civilization has advanced in direct ratio to the efficiency with which the thought of the thinkers has been translated into the language of the workers. Democracy of politics depends upon democracy of thought. "When the interval between intellectual classes and the practical classes is too great", says Buckle, "the former will possess no influence, the latter will reap no benefit". A dozen fields of thought are today congested with knowledge that the physical and social sciences have unearthed, and the whole tone and temper of American life can be lifted by putting this knowledge into general circulation. But where are the interpreters with the training and the willingness to think their way through this knowledge and translate it into the language of the street? I raise the recruiting trumpet for the interpreters.

YE EDITOR DISCOVERS

As we go to press, we find the newspapers full of accounts of forest fires in various parts of the country. Fires have been running uncontrolled for many days in a number of States. Very severe ones have occurred in the last few days in Maine, New York, and Wisconsin. Hundreds of CCC boys, as well as crews organized by public agencies, are combating the fires on many fronts. The Governors of Maine and New York have closed the forest areas to the public and prohibited fishing on all water except lakes. Fires of unprecedented severity have occurred in south Georgia, crown fires destroying forests over a considerable area in a relatively short time. In one instance which has come to attention, spot fires were set half a mile ahead of the main fire. Aluminum and turpentine cups were melted to unrecognizable masses of metal. In the Lake States, the Rockies, and in southern California the situation in the mountains is especially critical. The large drought area throughout the western half of the country is creating a situation which may take us back to the dry period of 10 or so years ago. The stage is all set for catastrophic fires throughout all portions of the country except in favored areas.

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In response to a recent question concerning the speed with which the Forest Service is spending its NIRA money, the Department has been informed that the promise made to Dr. Tugwell last summer that a major portion of our funds would be spent by August 25 of this year will be met. More than 15,000 NIRA workers were on the job during the last days of May, and although the number is increasing in some sections, such as Region 1 where summer weather is an important factor in employing large numbers of men, the depletion of funds in other parts of the country, such as Regions 7, 8, and 9, is resulting in a reduction of NIRA forces. This is raising a serious question as to whether the maximum of 21,000 which was estimated at one time as being possible under the NIRA program will actually be reached.

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H. K. Lawson, technician from the Forest Service radio workshop at Vancouver, recently passed through Washington after having installed 7 radio sets on the Cherokee Forest and two on the Alabama Forest. According to Mr. Lawson, the main difficulty encountered was due to old fashioned and poorly maintained power systems in the small towns in that section. He is now on the White Mountain Forest in New Hampshire, where a similar layout of radio communications will be installed. These are the first Forest Service radio installations in the eastern part of the country and will give the new Regions 7 and 8 thorough testing grounds for this type of equipment.

A. G. Simson, the technician in charge of the radio shop, plans to leave for Alaska shortly to attempt again to solve the unusually difficult radio problem involved in Forest Service work with boats in that part of the world.

The Japanese Embassy recently made inquiry regarding Forest Service radio equipment.

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Walter H. Meyer's publication on "Growth in Selectively Cut Ponderosa Pine Forests of the Pacific Northwest", Technical Bulletin No. 407, has just been published. It is of particular interest at the present time because Meyer has teken into account the effect of climatic cycles in determining growth rates. In his studies of some 25 areas in eastern Oregon and Washington he has found that a cycle trend in tree growth is definitely related to climate. An analysis of his data, which go back to 1633, shows that there was a certain wave length effect in the climatic cycles which tended to repeat good and bad conditions at intervals of approximately 22 years. The intervals were not regular, however, but varied between 17 and 30 years. The data are so wavelike in their character that there is no doubt that we are in the bottom now of one of those very severe droughts. If we can take Meyer's data, conditions should take a turn for the better and by about 10 years from now we should have good growing conditions again. This probably would mean more rain and of course less fires during that period.

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The National Forest Reservation Commission will hold its next meeting on June 22. It is expected that a purchase program of several hundred thousand acres will be presented at that time. In a memorandum dated May 27, 1933, the Secretary of Agriculture was advised that the Forest Service during the ensuing thirteen months would be able to purchase 4,400,000 acres of land. The total actually approved to date has been 4,008,000 acres, so that a further approval of 392,000 acres before the end of June would be necessary to redeem the promise of the Forest Service. Present indications are that this figure will be met, or perhaps slightly exceeded.

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The President has sent to Congress a message on rivers, which probably will appear in printed form within a short time. It is of particular importance to foresters because in the preliminary hearings forestry and flood control were inseparably linked into the program. Members of the preliminary committee from the Forest Service included Norcross, Chapline, and Sparhawk.

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R. F. Taylor has transferred from Alaska to Washington. He is at present in the Division of Silvics, where he is assisting in the administration of the silvical work of the Forest Experiment Stations.

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In view of the desire of the members of the Alaska Region to enjoy the discomforts of Washington climate, it is refreshing to find someone who is willing to take on duties in the land of snow and ice, to say nothing of rain. Perhaps the general exodus from Alaska to Washington has now taken on reverse English, because Miss Estella A. Wolfe who has been in charge of Research files is transferring to the Frozen North. She takes up her new duties in Alaska about the first of July, provided, of course, that the longshoremen's strike now in effect on the West Coast has been sufficiently cleared up so that communication with Alaska once again can be established.

MOTION PICTURES IN THE CAMPS

By Edward D. Clifford, Technical Foreman CCC

Since the first of the year, it has been my pleasure to show to the three Emergency Conservation Worker's camps and one NIRA camp located on the Huron National Forest, the motion pictures released by the Forest Service. These pictures have been on various subjects pertaining to forestry, from sheep herding to seed germination. We have watched with considerable interest the enthusiasm with which the boys greet each show and subject. We have wondered if just the shows that have plots and girls were the only ones in which they were interested, or if the pictures that were largely scientific were uninteresting and beyond their depth. With these things in mind the boys have been questioned, and they are interested in all the films, regardless of the subject. Most of them get thoughts from pictures. There were, however, many points of interest that they had missed and to remedy this situation, a talk is being prepared on each picture and given along with the showing. At the present time, efforts are being made to use the sound equipment of the projector, and with the aid of a microphone made from a telephone mouthpiece, a broadcast may easily be given, since it is difficult for a person to talk loudly enough for all to hear while the machine is in operation.

The first talk has been given, and with a little more experience and by ironing out a few rough spots, it is hoped that these talks will be both interesting and instructive. These talks are prepared by having a preliminary showing of the films in the presence of the camp superintendent and foresters, when notes are taken on the pictures. These are then used to make up the talk. The film is run as slowly as possible to enable the noting of all points that might be enlarged upon.

The attendance at all camps has been very good, being on the average about 75 to 80 percent of the men in camp at each showing, with a few cases of about 100 percent. In one case, at the NIRA camp, not only the enlisted personnel, but residents of Eldorado and Luzerne attended the showing. - From R-9 Bulletin

CRESTED WHEAT GRASS

(Excerpt from "Plant Novelty Notes for 1934" by Prof. N. E. Hansen
of the State College at Brookings, South Dakota)

One of the plants which I brought back from my seven tours of exploration is Crested Wheat Grass (Agropyron cristatum), which I brought first to the United States from Russia. I located this in many different places in eastern Russia and Siberia. Experience quoted in the Country Gentleman of February, 1933, and February, 1934, shows that it is now regarded the best grass for the drylands of the United States. It is worth many millions of dollars, and can be worth many millions more if government aid is given for propagation of this grass, also for getting more seed from its native home. If the western lands are to be put down to grass, it should be to the best kind obtainable, and in this Siberian species, we have a better grass than any of the native grasses of America. All this is noted to show that an agricultural explorer can sometimes help to change things for the better. If ever able to visit Siberia again, I would devote much time to obtaining many thousand pounds of this seed, stripped from the best plants in the most exposed situations. It would pay the prairie West to have this done.

KEEN DEMAND FOR FOREST RANGE

Because of the poor condition of public domain range, excess numbers of stock, and the prospects for a very dry season and shortage of feed, the demand for additional range on the Forest is very keen. Forage growth on the Forest is in advance of normal, but because of the lack of moisture, the growth has started to show signs of drying on the lower elevations. Water for stock on the outside ranges is becoming scarce, and ranges that have been used for stock under normal conditions are unable to carry the usual numbers. - From "The Nevada Telegram."

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SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XVlll No. 14 Washington, D. C. July 2, 1934

THE FOREST SITUATION IN THE SOUTH

(From the Annual Report of the Southern For. Expt. Sta. for 1933)

The South leads all other sections of the United States in area of commercial forest land, with 191 million acres or 39 percent of the total for the country. Within its borders, 73 percent of all land is either in forest or has been cut over and now lies idle; 64 percent of its gross area is commercial forest land. As the acreage of agricultural crops in the South declined over a million acres between 1920 and 1930, there is no reason to believe that any considerable part of the South's forest land will be needed for agricultural development in the near future.

While the South has about 200 billion board feet in merchantable saw timber, this amounts to but 12 percent of the volume of merchantable saw timber of the nation, exceeding in this respect, however, all other regions except the Pacific Coast. From the standpoint of industry, the forests of the South rank second only to agriculture in importance.

As a field for forestry development, the South has outstanding advantages, among which are its great number of valuable fast-growing native timber species, its long growing season, its abundant rainfall, the comparatively easy logging conditions, the relative ease and low cost at which forest crops can be produced, and its proximity to great timber markets.

The vast forest empire included in the eleven Southern States, from Virginia to Texas, consists of four principal types of forests: (1) longleaf-slash pine; (2) shortleaf-loblolly pine; (3) upland hardwoods; and (4) bottomland hardwoods. Sixty-eight percent of the total commercial forest area is occupied by pine types, the balance being in hardwoods.

The original virgin timber remains uncut on about 14 million acres, or on 7.5 percent of the total commercial forest area. An equal area has been so severely cut or burned that it will not reproduce naturally in commercial quantities within 20 years. The balance of the commercial forest area, 163 million acres, is in second-growth ranging from seedlings to saw timber, which has replaced the original forest stands. In 1930 second-growth stands made up 65 percent by volume of all the merchantable saw timber in the region. This ability to regenerate rapidly and produce saw timber at an early age is a very important factor in the practice of forestry in the South..

Practically all the forest land in the South is in private ownership; 98 percent of the area and 98 percent of the volume of timber are in private hands, if the 12 1/4 million acres of tax-forfeited forest lands (8 percent of the total forest area) are included as private lands. Nearly one-half of all privately owned forest land in the nation is in the South.

From the standpoint of current growth of wood, the South exceeds all other forest regions of the nation. In total volume of saw timber and cordwood combined, the United States Forest Service estimates show the South's commercial forests to be producing at the current growth rate of about 4.8 billion cubic feet annually, or 54 percent of that for the United States as a whole. In saw timber growth alone, the forests of the South are growing currently 6.8 billion board feet per year (softwoods, 4.9 billion; hardwoods, 1.9 billion), or 58 percent of the total for the United States. For the 1925-29 period, the saw timber and cordwood stands in the South were being depleted one and one-half times as fast as they were growing; the saw timber stands alone were being depleted almost four times as rapidly as their current growth rate. On the basis of estimates of the normal future requirements of the United States as a whole, the forests of the country are being depleted twice as fast as they are currently growing in cubic feet, or five times as rapidly for saw timber alone. This indicates that depletion of southern forests is not progressing as rapidly in relation to growth as it is in the rest of the United States.

In 1932 the South produced 37 percent of the nation's softwood lumber and more than 50 percent of its hardwood lumber. In the same year the South provided 41 percent of the volume of forest products exported from the United States, valued at over 30 million dollars, or 64 percent of the total value of all such exports. This region also contains 42 percent of the volume of all pulpwood species in the United States, a volume which is increasing through natural growth more rapidly than in any other region.

In 1929 the forest industries of the South employed 24 percent of the persons employed in all manufacturing industries, paid 19 percent of all wages paid, and produced 10 percent of the value of all manufactured products.

All of the country's naval stores (turpentine and rosin) are produced in the southern States and these represent about two-thirds of the entire world production. As a southern industry, the production of naval stores is exceeded only by agriculture and lumbering.

The products of the southern farm woods produced an income for farmers of over 82 million dollars in 1929 and ranked fourth among all agricultural crops, being exceeded only by cotton, tobacco, and potatoes.

The industrial opportunity for forestry in the South is not surpassed by any other forest region in the United States. This opportunity has increased as the original stands of virgin forest have gradually disappeared and as the use of the products of second-growth forests has increased. The Copeland Report indicates that forestry practice beyond simple fire protection is in force on over 4 million acres in the South. This includes two grades of forestry practice: (1) conservative cutting, planting, leaving seed trees, and other practical measures for improving production, without definite plans for sustained yield, are found on some 2,750,000 acres; and (2) permanent forest-land management and organized plans for sustained yield are in effect on over 1,300,000 acres.

The South is fortunate in that most of its commercially important species can be reproduced before or during logging, or by leaving a few trees for natural reseeding after logging, without resorting to planting. There are extensive areas in the South, however, which have been cut so clean or burned so severely that forests can be re-established only by artificial means. It is estimated that during the next 20-year period an area of 5,570,000 acres in the South could well be planted to forest trees. The estimated cost of such a program will range from $3 to $7 per acre. The magnitude of such a program can be gaged by the fact that the total area planted in the South prior to 1932 totalled only 73,248 acres. Practically all of this planting was by private agencies; about two-thirds by lumber companies and the balance by farmers, There is good reason to believe that the South, with its many advantages for forestry developments, will continue to be an outstanding region from the standpoint of the production of timber and other forest crops and that the forest industry will take high rank in the South's economic future as it has in the past.

Although the South possesses excellent possibilities for timber growing, it is greatly in need of additional basic forestry information in order to take full advantage of its opportunities. This basis for forestry can best be obtained through a broad forest research program. The forest problems of the South are complicated by the wide range of climatic and soil conditions it encompasses, its great variety of timber species and types, and the multiplicity of forest products available from its forests. The Southern Station's program has been built up over the past several years to concentrate on the most important problems of growth, protection, and use of the South's forest land resources.

RANGER JIM'S SAYSO

Dear Editor:

I shore was mighty interested in reading Ranger Bill Jones' piece in your paper of June 4. On account of knowing old Bill Jones personally for nigh onto 30 years, and for the past 12 years having a district right along side of his, and having ridden along the trail often with the old badger, it kinder surprised me to see a piece by him on anything, especially on uniforms. I say especially on uniforms for Bill used to wear what he called a uniform for many years. It was cut kinder like a barley sack---with holes for his arms and his head---but it didn't have much style to it, outside of the buttons. A few years ago Bill did buy himself a real uniform, and about the first time he appeared in it, the folks where he boards all said, when Bill come in, "Well, well, look at our new Boy Scout!" And was Bill's face red?

I'm glad that Bill mentioned the traffic cops and the stage drivers, for these worthy public citizens have a habit (or maybe it's required of them, if they want to hold their job) and that is that you never see a traffic cop or a stage driver that isn't wearing a suitable and fitting kind of head-gear with his uniform. You don't ever see these public servants wearing an old battered gray, brown, tan, or black hat of the fedora, narrow-brim, or wide-brim, or ingrowing crown style, do you? No sirree. But that is exactly the kind of any kind of an old hat that forest officers wear with their uniforms---any kind they happen to have, regardless of whether their uniform is brand-new, well or badly fitting, etc. And that, Bill, is what I'm driving at---that it don't matter a whit how fine-looking, or well-fitting, or snappy a forestry uniform they wear, the average forest officer ruins it all by sticking on his bean any kind of hat. It aint a uniform with any kind of a hat.

And this is also true of neckties (not to mention wall-paper shirts). Now, Bill, you and me both have seen forest officers--pretty high-up officers too from the Regional office--going around with good-looking uniforms but wearing pale blue, pale pink, bright red, or red and blue, or even yaller neckties--and the tout ensembly didn't look so hot either. You just don't ever see a stage driver nor a traffic cop pulling such raw stuff as that! Why don't they? Either they have more savvy, or it just don't look good to their beauty sense, or the company's rules don't allow it.

Of course I could go on and bring in Army officers and National Park folks, but I dassent do that, for when you mention either of these to some forest folks, why they just naturally see red and almost foam at the mouth and begin to talk of Mussoliny and Hitler and the Soviets, so I won't mention these other worthy government employees.

All of which bring me to my main point, Bill, and that is that what makes the uniform is after all, the hat and the necktie.

Here's looking at yer, Bill -

Jim Brown.

A SOURCE OF FARM FENCING STATISTICS

By J. Elton Lodewick, Pacific Northwest For. Expt. Sta.

Various methods of estimating the existing amounts of farm fencing and the annual post replacement requirements have been proposed. None of the methods so far proposed has been satisfactory, and the estimates from one source frequently do not agree with those from another. During the past winter a new source of basic data has been located, and the results are worthy of record. Through the courtesy of officials of the Federal Land Bank of Spokane, their files of loan applications, which provide space for entering the number of rods of fencing and the acreage of the farm for which the application is made, were made available. These figures provide the basis for computing fencing-acreage ratios. Data were transcribed for 763 Oregon and 1510 Washington farms. It was evident from the outset that the fencing-acreage ratio varied inversely as the size of the farm, hence the data were sorted and ratios computed for farms of various size classes. The results are presented below.

	Amount of Fencing per Acre		
Size of Farm	Oregon	Washington	Pacific Northwest
Acres	Rods	Rods	Rods
1-19	13.64	13.97	13.92
20-49	9.00	9.28	9.22
50-174	4.64	4.87	4.80
175-499	3.22	3.15	3.18
500-999	2.37	2.30	2.34
1000 & over	1.53	1.78	1.57
Totals and Averages	2.43	3.65	2.96

These data permit the construction of a curve from which the ratio for a farm of any size can be read. Combining the ratios so determined with census records of the acreage of farms in each size class yields what must be considered as an accurate approach to the amount of existing farm fencing.

The study indicates about 81-1/2 million rods of farm fence in Oregon and Washington, which is considerably greater than the 51 million rods estimated in 1930. Assuming one post per rod and an average post life of 12 years, nearly 7 million posts per year are needed for maintanance alone.

THE PENNSYLVANIA FIRE WAGON

(From "Forest Leaves" December 1907)

The Department of Forestry of Pennsylvania has made another additional innovation in a fire wagon. The 1905-06 report of the Department states that this wagon was built expressly for the purpose of conveying as near to the forest fire as it can go everything the particular nature of the service requires. Every utensil is kept constantly on the wagon, in perfect order, all that is necessary being to hitch the horses to the wagon and go.

On the wagon are four men, one as wagonmaster, one a driver, and two men to use the force pump. There are also four ten-gallon kegs filled with water for the pumps, a five-gallon keg of fresh water for drinking purposes, six axes for brushing out a back firing line, six rakes for clearing away the leaves, shovels and mattocks for trenching or throwing earth on fire, canvas buckets for carrying water, chains for dragging burning logs to safe points, pack-saddles to carry water when the end of the wagon road is reached. Food for one day is kept in the wagon, and also an emergency case of medicines.

The wagonmaster is held absolutely responsible for every article on this wagon. He alone has the possession of the key to the house where the wagon is kept. He and the driver remain with the wagon to guard it, to issue utensils and food and remove the wagon and riding horses to a point of safety if the fire advances to a dangerous proximity.

It is probable that in the future a portable chemical engine may be added to the wagon equipment, and possibly adapted also to a pack-saddle, but this has not yet been done.

MORE EARLY FIRE!

"The sun rose about 6 o'clock, but it was a considerable time before the dewy vapours, which had covered the ground during night, were dispersed. About an hour after, while yet in the midst of an extensive pine barren, southeastern Georgia we were suddenly enveloped in what we at first supposed to be a thick fog; but as we proceeded further on, we discovered it to be the smoke of a large fire in the forest. No flames, however, were discernible any where; and as we rode on, the smoke continued to thicken, insomuch that we could not see the two leaders: and it was with great difficulty we could draw our breath. Unaccustomed to such a scene, Mr. Chapman and I began to hesitate about going any further, for we expected every moment to be surrounded by the flames which had created such an immense body of smoke. Unfortunately, this was the only road, unless we had returned back to Pocotaligo, and gone down the road to Beaufort, which branches off towards Ashepoo bridge; but this would have delayed us a whole day, and the coachman expected every moment to arrive at a log hut, to change horses, and where he meant to inquire whether the fire extended across the road, and would prevent us from passing.

"We had now rode upwards of three miles through this thick cloud of smoke, and should have passed the hut, had not a negro been waiting on the roadside for our arrival. Here we alighted while the horses were changing, and went into the hut, which was inhabited by two negroes employed to take care of the horses; they informed us that the forest had been set on fire a day or two before, to clear the ground of the long grass and brushwood, and it being very dry weather, the fire had spread further than was intended: they did not think that it had reached the road, though the smoke had settled in the forest, in consequence of there being no wind to disperse it. I could not help pitying the situation of these two poor fellows, who resided in the neighborhood of such a dreadful conflagration." - Lambert, "Travels Through Canada and the U. S." in 1807.

YE EDITOR DISCOVERS

Operators under the Lumber Code now number over 30,000, which is more by far than under any of the other Codes. Approval of the amendment to Section II(a) of the Code, which is expected daily, will bring in thousands of additional operators. They will be operators in minor wood industries and the administration of their activities will present a great problem to the Code agencies.

Three large southern pine concerns have obtained increased lumber production allotments under Section VIII(k) of the Code, which provides for a 10 percent increase to operators whose lands are managed on a sustained yield basis. These are the first increased allotments granted by the Lumber Code Authority.

The pulpwood industry is seeking a Code of its own. The conservation article of the proposed Code is identical with that of the Lumber Code.

Forest Service participation in Code forest practice will get in full swing July 1, but much work has already been done in all the Regions.

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There have been spotted rains throughout the western National Forest Regions, but the drought situation in general has grown steadily worse. This is particularly true of Region 2, and the Regional Forester is making a special effort to appraise the possibilities of taking some extra stock to the more inaccessible areas on the Forests which have not been grazed. The question of water shortage due to the springs and streams drying up is about as important in some places as the lack of forage. Region 4 is making an effort to begin a program of water development under the provisions of the emergency drought measure. The situation is about as critical as any year in the history of the National Forests, if not more critical.

Many people outside the Forest Service have not fully appreciated that these drought calamities affect National Forest ranges as well as other ranges and do not seem to realize that special and additional burdens are thus placed upon the forest ranges to accommodate the regular permittees. Regional Foresters have adopted a liberal policy of letting stock on the range ahead of the regular open seasons and in some cases have permitted outside stock without permit to drift back and forth across the boundaries to watering places. There has been a disposition on the part of everyone, to fully and properly appraise the emergency and to extend any practical relief locally that is possible and that will not introduce insurmountable problems in the handling of the regular National Forest range business later on in the season.

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Wood is used in curing bright-leaf cigarette tobacco. Data collected recently by the Southern Forest Experiment Station indicate that 1½ cords of wood are used per thousand pounds of cured tobacco. Under the existing marketing agreement, Georgia's tobacco quota for 1934 is 59 million pounds. Accordingly, some 90 thousand cords of fuelwood, mostly black gum and oak, will be required in Georgia alone during 1934. Possibly a total quantity of wood in excess of 250 thousand cords will be used for curing tobacco this year.

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Junior Foresters and Junior Range Examiners selected from recent Civil Service eligible lists are distributed as follows by Regions. Only those employed in a temporary status are listed.

Junior Foresters	R-1	R-2	R-3	R-4	R-5	R-6	R-7	R-8	R-9	Total
NIRA	20	5	14	7	53	11	61	-	49	220
ECW	2	8	11	4	-	7	51	-	65	148
Acq.	-	-	-	-	-	-	36	-	10	46
Jr. Range Examiners										
NIRA	13	4	13	13	10	3	-	-	1	57
ECW	-	2	-	-	-	-	-	-	-	2
Acq.	-	-	-	-	-	-	-	-	-	0
Totals	35	19	38	24	63	21	148	-	125	473

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Establishment of the new Region 8 offices at Atlanta, Georgia, is now under way. Most of the major appointments of personnel have been made and the Glenn Building has been selected as the new headquarters.

Joseph C. Kircher is the new Regional Forester, and the following have been appointed as Assistant Regional Foresters: H. O. Stabler, Chief of Operation; A. C. Shaw, Chief of Forest Management and Range Management; William P. Kramer, Chief of Lands; and C. F. Evans, Chief of States Relations. Appointments of Chiefs of Finance and Accounts and of Law are expected soon.

Mr. Stabler was Chief of Operation of the old Region 7. His assistant will be James F. Brooks, former Supervisor of the Selway National Forest in Idaho. G. C. Bell, formerly of Region 7, will have charge of Maintenance.

Mr. Kramer was Supervisor of the Pisgah National Forest. He will be assisted by P. J. Paxton, who is being transferred from Region 7 Division of Lands.

Mr. Shaw was formerly of the Lake States Region. His assistant will be Bennett O. Hughes, who is being transferred from the California Region.

Mr. Evans was formerly District Inspector of the Southeastern States.

R. E. Pidgeon, formerly of Region 7, will be Regional Engineer, and George W. Root, Darnall Burks, and William N. Sloan will be Associate Engineers. H. B. Herms will have charge of Finance and Accounts as assistant chief.

The line-up for Region 7 will be as follows: Robie M. Evans, Regional Forester; James E. Scott, former Supervisor of the White Mountain Forest, will be Chief of Operation; Howard Hopkins, formerly of the Washington Office of Lands, will be Chief of Forest and Range Management; Ira T. Yarnall will be Chief of Lands; C. R. Tillotson, formerly District Inspector for the Northeastern States, will be Chief of States Relations; and Leslie T. Mahurin will be Chief of Finance and Accounts.

Mr. Scott will be assisted by R. W. Shields and Stanton G. Smith as inspectors. L. S. Gross, in charge of planting, will assist Mr. Hopkins; S. H. Marsh and D. W. Tabbutt will assist Mr. Yarnall in land purchases; and Mr. Mahurin will be assisted by Walter F. Oakes.

J. C. Dort will be Regional Engineer, with Marshall S. Wright and Earl G. Marsh as his associates.

A. H. McConville will be the Principal Attorney, with A. R. Neff and J. M. Burns, title attorneys.

Most of the personnel of the new Region 7 are from the old Regional Office. A few have been transferred from the Washington Office.

Offices of Region 7 will remain in the Victor Building, Washington, D. C.

CHESTER E. JORDAN

Chester E. Jordan, one of the real stalwarts of the Forest Service in Region Five, on June 7 crossed over the Great Divide.

Starting as a guard in 1907 on the Sierra Forest, Jordan worked his way up in successive steps to Forest Ranger, Deputy Supervisor of the Sierra, Forest Supervisor of the Inyo, National Forest Examiner, again as Forest Supervisor of the Santa Barbara, until he became District Forest Inspector in 1925 on construction work on the National Forests of Region Five, continuing in this work until a few days before his death.

Of the many forest men with whom I have been acquainted, he was never known to shirk any of the heavy tasks that came his way (and there were plenty of them). He was a man of prodigious strength, working long hours on fire lines, and on arduous construction projects such as trails, bridges, telephone lines, cabin building and the like. He never faltered from the huge burdens that came his way. His men worked willingly with him and he was a comrade to them all. As he went up in the line of service he pursued the even tenor of his way - always giving of his best to the work at hand.

When fires broke, and he had many of them, on the Sierra and Santa Barbara Forests and elsewhere, he lost no time in collecting his crews and making a quick advance to the threatened area. He preferred to use the airplane to size up the problems which faced him and his men, and several times he had close escapes from a crack-up.

He was deeply interested in game and fish work and helped to stock the barren streams of the Sierra. His outstanding characteristic was his friendly attitude towards his fellow officers and the thousands of people he made contacts with during his long term of service. Rich man, poor man, beggarman, thief - all knew that he was on the square. He did not hesitate however to call the bluff of those who dealt in any sort of trickery, and he had no use for loafers.

It was my great good fortune to work with him in many field trips on the Sierra and the Santa Barbara Forests. I recall one incident on the Sierra which nearly caused disaster to him and M. A. Benedict. They were using a Ford car with flanged wheels on the San Joaquin and Eastern Railroad to take them up to Big Creek. Being men who wasted no time in getting to their destination, they swung the car around a bad curve at a pretty rapid rate and it jumped the track. They were thrown from the car and catapulted down a rocky slope. Both were injured, as I remember, and were laid up for quite a spell.

An interesting episode occurred at the Auberry Ranger station about 1912. A pack trip had been planned into the far reaches of the forest. At that time Coert DuBois was District Forester and I was Supervisor. Jordan had brought in his horses and mules, and a small horse named "Baldy" (which I owned) was selected as a mount for DuBois. This animal had a rather mean disposition and would rear up on his hind legs. DuBois mounted "Baldy" but did not stay long in the saddle. Jordan took hold of the recalcitrant animal and soon gentled him, which was all right with DuBois, and the cavalcade continued on its way.

In 1915, Jordan and I took a pack trip up the South Fork of the San Joaquin River, and camped at a crossing not far from Florence Lake. We were both fond of fishing and started out to cross South Fork in high water. The log crossing was slippery and in casting I lost my foothold and dropped out of sight under the log for a few seconds, coming out below. I was scared because of the large driftwood in the river, but managed to hang on until Jordan got a pole and pulled me up. I was thoroughly soaked and it took sometime on a sunny rock to dry me out. If Jordan had not been right on the job, I do not know where I would have ended up.

Jordan knew the cattle game well and all the permittees respected him as a man of common sense. He had a lot to do with the timber sale work in his district. His cabin at Shaver Lake was adjacent to many of the private lands of the lumber companies, and he saw to it that nothing was put over on him. At the Shaver cabin hospitality was the order of the day and it was not uncommon to have from 3 to 10 people around the board. Mrs. Jordan was a fine cook and served delicious repasts.

All in all, I have but this to say: Not many men were built in Jordan's mold. His family life was ideal. The memories of my work with him will never be forgotten as long as I live. And it is certain that his name will be recorded in the Great Book as a good and faithful forester - a fine public servant. - Paul G. Redington.

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SERVICE BULLETIN

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> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES. WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XVIII No. 15 Washington, D. C. July 16, 1934

STORIES OF THE CCC TOLD IN NEW BOOK. "YOUTH REBUILDS"

By F. A. Silcox

Through the good judgment of the American Forestry Association, this book of the CCC has been given to the public. It is made up of stories and verse written by members of the Civilian Conservation Corps scattered throughout these United States. The stories represent a cross-section of America, not only in points of view and geographical range, but also in racial and cultural backgrounds. Here among these boy-authors are names of pre-Revolutionary settlers and pioneers of this country, and also the names of later immigrants to us from Southern and Central Europe. Here in this story collection they are mixed, just as the boys are in the far-flung CCC camps; and the stories are, like the men, a cross-section of America today.

Much has appeared in the daily papers and magazines on the CCC, mostly of their camps, but all of it has been written by older people and therefore objectively; here is the real story of the CCC, the human stories of the boys who have made the movement what it is. There are human pathos, near-tragedy, pride, new resolves, self-reliance, faith, some humor, in these stories. It is not a book of what the boys have done for American conservation, not a record of trails or bridges built or forest fires fought - that is in the statistics in the Appendix - but it is a story of the rebuilding of youth - physically, mentally and spiritually, in the camps - "a crucible of youth", as one CCC puts it. It is an intensely human document, written by the boys from out of their own souls.

Foresters, along with others who have been mixed in this CCC movement for its first year, have been too largely concerned with what these boys have accomplished in forest, park, range, or gullied field; how much work these boys could do and have done. There has not been, I fear, enough real interest or concern in what has been taking place in the minds and hearts and souls of these 300,000 young American workers.

Thanks to the American Forestry Association we now have an opportunity of learning what the CCC has meant to American youth. We have need to know more about the social side of this great youth movement. I wish that every member of every Civilian agency concerned with the CCC could read these stories. I hope that every member of the U. S. Forest Service will read them.

PUBLIC DOMAIN FINALLY TO BE PLACED UNDER RANGE MANAGEMENT

By L. F. Kneipp, Washington

At the close of the Civil War the State of Texas was teeming with cattle whose owners had been too busily engaged in supporting the lost cause to spend any time in rounding them up. Northward lay a vast empire of virgin range occupied until then only by buffalo, elk, antelope, and other wild animals. Into this void there began a flow of Texas cattle that marked an epoch in the history of the United States.

By the beginning of the present century, this process, supplemented by livestock importations from other regions, notably of sheep from California, had reached a point where the specter of overgrazing had begun to excite alarm. Early meetings of the American National Livestock Association began to discuss and demand remedies for the situation. Even at that remote date realization existed that uncontrolled use of what previously had been regarded as inexhaustible stores of forage carried the threat of destruction both of industry and of national wealth.

It was, of course, evident that the crux of the situation lay in the unreserved, unappropriated, and wholly uncontrolled public domain, then representing a fifth, if not a quarter, of the entire land area of the continental United States. In the absence of any legally established policy, program, or plan for the regulation of the use of these lands they were the free spoil of anybody who chose to invade them, even though invasion was intentionally destructive so as to exclude the possibility of competition in range use. The obvious and logical solution of the problem therefore was to establish definite principles of Federal management of the unreserved lands.

Meanwhile, the National Forests slowly were developing in numbers and area, and when they were transferred to the Department of Agriculture there was quick recognition of the imperative need for regulation of their grazing use. With full cooperation and participation by representatives of the livestock growers themselves, principles and plans of management were formulated and applied, and as their effectiveness became apparent more and more communities and groups of stock growers worked vigorously and aggressively to have their ranges included within the National Forests so that they might share the benefits of regulated range use.

However, much of the unreserved public domain was treeless and not subject to inclusion within National Forests. Among the livestock growers using some of these areas there developed a desire for the establishment of some comparable program of regulated range management under Federal auspices. In consequence, Senator Burkett of Kansas, about 1906 or 1907, introduced the first of what was to be a long and multiplying series of bills designed to authorize and establish systematic range management of the unreserved public lands.

There was, however, no unity of opinion, either between stock growers or other groups, as to the desirability of such legislation. Stockmen who by leases of railroad grant lands or the ownership of strategic sources of water supply, trail routes, etc. controlled great expanses of the public domain without cost or responsibility saw in range regulation a menace to their control and hence opposed it bitterly. Professional land locators saw in it some limitation of their ability to capitalize the liberal public land laws and also opposed it. At that time, the ambition of every community and every region was to multiply its population, to induce more people to flow in and increase its greatness. To the organized agencies representing these communities any restriction of the homestead laws was a grave threat, and every resource of opposition to the legislation was employed.

In 1908, with the endorsement of President Theodore Roosevelt, success was almost attained but was lost through the skillful political maneuverings of representatives of the livestock interests. Almost without exception the same persons later stood up in meetings of livestock associations and conceded that their position had been short-sighted and that what they had then regarded as their good fortune in killing the bill had in fact been their misfortune. Nevertheless, there was no later combination of presidential and congressional support under which the succession of bills had found equal opportunity of favorable action until Franklin D. Roosevelt became the Chief Executive.

Meanwhile, the Forest Service, through E. A. Sherman, and the Department of the Interior, through E. B. Finney, Assistant Secretary, had collaborated in the development of a safe and sane legislative program for public range control. During the 72d Congress the fruits of their labor so impressed Don B. Colton, then Chairman of the Public Lands Committee, that he introduced and sponsored the bill and almost secured its enactment.

Mr. Colton was not a member of the 73d Congress, but his interest in the legislation was assumed by Representative Edward T. Taylor of Colorado, who introduced and aggressively sponsored a bill which in its initial stages conformed closely to the one developed by Sherman and Finney. Few bills, however, are enacted by Congress in identically the same form in which they are introduced, and the Taylor bill was no exception. Amendment after amendment was offered, many of them believed by the Forest Service to be objectionable in that they permit the establishment of vested rights and give the States definite powers of regulation over the public lands, precluding possibilities of constructive Federal management. Believing that these facts should be known, the Forest Service fearlessly and aggressively called them to the attention of all concerned. But the bill was enacted by Congress; the Attorney General of the United States has decided that it does not legally restrict Federal authority over the public lands; and the President has signed the measure, thus bringing to an end approximately a quarter century of debate and discussion. However, the bill is applicable to a maximum of only 80 million acres out of the 173 million which still remain unreserved and unappropriated. In announcing his approval of the bill, the President made the following statement:

"The passage of this act marks the culmination of years of effort to obtain from Congress express authority for Federal regulation of grazing on the public domain in the interests of National conservation and of the livestock industry.

"It authorizes the Secretary of the Interior to provide for the protection, orderly use, and regulation of the public ranges, and to create grazing districts with an aggregate area of not more than 80 million acres. It confers broad powers on the Secretary of the Interior to do all things necessary for the preservation of these ranges, including, amongst other powers, the right to specify from time to time the number of livestock which may graze within such districts and the seasons when they shall be permitted to do so. The authority to exercise these powers is carefully safeguarded against impairment by State or local action. Creation of a grazing district by the Secretary of the Interior and promulgation of rules and regulations respecting it will supersede State regulation of grazing on that part of the public domain included within such district.

"Water development, soil erosion work, and the general improvement of such lands are provided for in the act.

"Local residents, settlers and owners of land and water who have been using the public range in the past are given a preference by the terms of the act to the use of lands within such districts when placed under Federal regulation so long as they comply with the rules and regulations of the Secretary of the Interior. The act permits private persons owning lands within a district to make exchanges for Federally owned land outside a grazing district if and when the Secretary of the Interior finds it to be in the best public interests.

"The Federal Government, by enacting this law, has taken a great forward step in the interests of conservation, which will prove of benefit not only to those engaged in the livestock industry but also to the Nation as a whole."

STUMPAGE AND LOG PRICES

By Henry B. Steer, Washington

About 4,500 transactions of privately owned stumpage and 5,000 log transactions for 1933, as reported to the Forest Service through the cooperation of the Bureau of the Census, have been compiled and analyzed by the Division of Forest Economics. The 1933 price record is particularly interesting because the lumber code was adopted during the year. Just what effect the provisions of the code had on the average prices paid for standing timber and logs in 1933 cannot be definitely determined because the code was in operation for only one-third of the year. (It was approved by the President on August 19, 1933).

To sum up the more important comparisons between the 1933 and 1932 data:

1. The quantity of stumpage reported sold in 1933 was more than double that reported sold in 1932.

2. The quantity of logs reported sold in 1933 was about 60 percent greater than that reported sold in 1932.

3. Although there is considerable variation between species, for the country as a whole the average price of stumpage decreased by 6.6 percent in 1933 from the 1932 average.

4. The average price of logs increased by 5 percent in 1933 over the 1932 average.

Price data compiled by the Bureau of Labor Statistics show substantial increases in 1933 in the wholesale price of all building materials and in the wholesale price of several representative lumber items. Substantial increases in the selling price of lumber f.o.b. the mill in the Inland Empire are shown by data compiled by the Missoula office of the Forest Service.

An interesting trend is apparently disclosed by a comparison of the quantity of logs reported sold which were intended primarily for the production of lumber. Consideration must be given to the fact that the data are not based on a 100 percent canvass in any year although the canvass has been on approximately the same basis from year to year. The trend is shown by the following table:

Percentage of logs reported sold intended primarily for the manufacture of lumber.

	1929	1930	1931	1932	1933
Softwoods	93.7	83.9	83.3	73.9	70.3
Hardwoods	69.8	69.9	59.9	71.9	55.9
All sales	91.5	82.9	81.0	74.0	69.0

This trend is probably caused by a number of affecting factors, including the nature of the basic data. However, the greater curtailment of the production of lumber, as compared to other wood using industries, may have something to do with it. It is probable, also, that a greater percentage of the products of the forest are going into veneer, cooperage, and other specialty uses.

FIELD CLOTHES! WHY NOT?

By L. S. Murphy, Washington

Much can be said for H. D. Cochran's proposal in the June 18 Service Bulletin. True "...a rose by any other name would smell as sweet." However, "field clothes" does have a different connotation from "uniform." For instance, no insignia, military precision, and such falderol --"trimmings", he calls them. So long as we have a uniform someone will want to doll it up with service stripes, devices indicating rank, and whatnot and require it to be worn thus and so on all occasions instead of just "in the brush" as with field clothes.

One gathers that Cochran thinks the present type of clothes -- the cut of them, the style of hat, puttees, etc. -- are all right. But are they? Is the present rig a suitable one to do real work in, especially during the warm summer months?

The light weight fabric while cool enough is not serviceable except perhaps for riding round in a car. Furthermore, the tight kneed riding breeches and puttees (called "music rolls" by some old timers) have always been next to useless for foot work in rough country or in down timber. They are in fact as obsolete for that purpose as the chaps which they superceded. The optional knickers and wool stockings do, of course, afford somewhat more freedom of action although the cuff or band below the knee with the stocking either over or under it is an uncomfortable constriction besides preventing proper ventilation and evaporation and thus getting soggy with sweat. Even the Stetson is a hot and cumbersome affair, originally adopted as a compromise so that the then old timers could get out from under their ten-gallon hats and yet sweat some from its weight.

"H'raus mit um." Or at least supplement them, for the men who want to work in as much comfort as possible, with something less cumbersome.

Why not a jumper, shorts, and a ventillated hat (each of standard color) and some loose-weave fabric? The jumper, cut like those worn by hotel and railway porters, is suggested instead of a shirt, because the tails of the latter take too much time to keep them tucked in where they belong and when there they are simply useless drygoods that will not stay dry. The jumper, being loose at the bottom and not tucked in, provides suitable ventilation for evaporation. It also can readily be put on and off, particularly if equipped with a full length zipper fastening, so that one can readily adopt the CCC style of working bare-backed. It is rather surprising that the CCC's haven't gone a step farther and adopted the lumber jack's stagged pants, the projenitor, perhaps, of shorts. The idea of shorts will no doubt be received with arched eyebrows, or even a derisive laugh, by many. But many continental foresters and alpinists wear them, and the hardy Scot and our own lumberjacks (almost), not to mention the scoutmasters for whom we are sometimes mistaken. At any rate, anyone who has ever worked or otherwise exercised in them could not easily be persuaded to trade them for knickers or longies.

Such garments might readily be designed to serve the dual purpose of underclothes as well as satisfy the proprieties while in service as honest-to-goodness work clothes.

Don't forget this is not a suggestion for an about-town uniform but for work clothes in camp and the brush.

WHAT OF THE CHESTNUT TREE?

(By Henry E. Clepper in Pennsylvania Dept. of Forests and Waters Service Letter)

Twenty years ago most people if asked the question, "What is your favorite tree?" would have replied without hesitation, "The chestnut."

In 1904 a bark disease, commonly known as the chestnut blight, was introduced into Brooklyn from China by way of Europe. Spreading from ornamental trees to native chestnuts, the disease was soon established in New England, New York, New Jersey, and Pennsylvania. It swept toward the Middle West and south through the Appalachian Mountains. Practically all chestnut forests and orchards were killed.

Now, after three decades of devastation by the blight, botanists, foresters, and nature lovers generally are wondering if the chestnut will ever come back.

The chestnut has often been called the most useful tree of the East. It is a rapid grower. The wood is durable and has a wide range of uses from fence posts to cabinet work, and yields tannic acid valuable in the tanning of leather. But the principal gift of the chestnut tree, the one that makes it a universal favorite, is its nuts.

No tree native to the East produces a nut as delicious as the chestnut. Livestock and animals of the forest eat them. In the good old days, no matter how much of the nut crop the squirrels hoarded, there was always sufficient to go 'round. Thanksgiving Day without roasted chestnuts was like Christmas without a Christmas Tree.

Trees that are sprouters have great powers of recuperation. When a pine tree is cut down it dies. When a chestnut is cut, within a year the stump begins to send forth sprouts. Often attaining a height of eight feet or more in two years, these sprouts if blighted may die, but new ones constantly spring up to take their place.

In the early years of the disease the blighted shoots died quickly, often before they were two feet high. Recently, however, many blighted sprouts have been found that are thirty-five feet tall with diameters of five inches. Smaller trees with no apparent traces of blight at all have been discovered.

Twenty years ago a single blight canker on the trunk was sufficient to kill a large and vigorous tree. During the past five years foresters have located chestnut sprouts, bearing as many as a dozen cankers, that continued to live.

On favorable sites trees have been found that are healing over the blight cankers with new woody tissue. This discovery is important because if healing continues, and indications are that it will, the chestnut should come back. Healing signifies resistance. When resistance is build up, chestnut trees may thrive and eventually reach maturity despite the disease.

The best news of all is that the larger sprouts are now frequently found bearing crops of nuts. Throughout eastern Pennsylvania last fall there were reports of chestnut trees, from eight to ten years old, with fairly good crops of burrs, though not all the burrs contained mature nuts. It is now possible to gather a pint or even a quart of nuts - if you know where to look for them.

During the course of the disease many guesses concerning the ultimate fate of the chestnut have been made. There is now evidence in the eastern forests to indicate that the most virulent stage of the blight is on the wane. Plant pathologists are not generally given to prophesying, but there are those who believe that the outlook for the recovery of the chestnut is more encouraging today than it has been since the disease was introduced into this country thirty years ago.

YE EDITOR DISCOVERS

President Roosevelt vetoed Senate Bill 3714, an act to convey certain lands in the Harney National Forest to the State of South Dakota for park purposes.

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At its meeting on June 22, the National Forest Reservation Commission gave approval to forest land purchases aggregating 884,803 acres and valued at $2,129,377, or an average of $2.40 per acre. That means that since the President allotted 20 million dollars for the purchase of forest lands, slightly over one year ago, there have been examined, cruised, appraised, and approved for purchase a total of 4,892,804 acres. The total amount to be paid for this land is $11,074,195 or an average of $2.26 per acre. Of the fund allotted a little more than 5 million dollars remains unobligated and with that it is hoped to purchase something in excess of 2 million acres more, in which event the 20 million dollar allotment will result in an increase of about 7 million acres in National Forest areas. Present circumstances indicate a strong probability that the President will make an additional 20 million dollars available for a continuation of the work during the coming fiscal year.

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Seed from local sources is better than that from distant ones. This is being demonstrated by plantations of the Southern Forest Experiment Station, at Bogalusa, Louisiana, in cooperation with the Great Southern Lumber Company. Loblolly pine from Texas seed is 20 percent less tall than Louisiana trees, and from Arkansas and north Georgia seed is 30 percent less tall. The plantations are now 7 years old and these marked differences have become apparent only in the last three years.

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Because of the advances in the scientific use of wood and wood by-products in many industrial fields, the University of Michigan has decided to offer a combined engineering-forestry course. In this course students will study engineering for three years and forestry one year, receiving the usual engineering degree. A fifth year in the School of Forestry and Conservation will entitle them to the further degree of "Master of Forestry in Wood Utilization."

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There will be 615 sending radio stations in operation by the Forest Service this season. In order to be prepared for possible future use of ultra high frequency sets which are now being tested and developed at the radio laboratory, application has recently been made to the Radio Commission for six frequencies in the ultra high frequency bands, one group in the 3232 KC band, the other group in the 3839 KC band.

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For the first time in the history of Nira and Devnira the total number of employees has passed the 17,000 mark. It will be interesting to watch whether the employment curve continues to go up for awhile or levels off for the remainder of the first working year, which ends August 25.

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R. F. Taylor, assistant in the Division of Silvics, recently went to Yale, where he obtained his doctor's degree in forestry. One of the momentous events connected with the granting of this degree, as reported by Taylor, was the fact that President Roosevelt also obtained a doctorate from Yale University at the same time. It is not often that a forester and a President of the United States receive doctorates from the same institution at the same time.

GERMANY CREATES NEW DEMAND FOR AMERICAN LUMBER

American Southern Pine will continue to be used for German radio towers in excess of 160 feet, according to advice received from Vice-Consul Alan N. Steyne, Hamburg.

In making this announcement Axel H. Oxholm, Chief of the Forest Products Division of the Department of Commerce, points out the great importance of this step on the part of the German Government and the beneficial influence on the American lumber export trade.

According to Oxholm the German Government has erected a number of wooden radio towers up to 628 feet in height. American Southern Pine was selected on account of its superior strength properties and longer life than any European wood heretofore used for the purpose.

These radio towers are built under the system called "Modern Connectors for Timber Construction." Through disks, rings or plates the timber joints are strengthened up to eight times compared with the ordinary bolted joint. This construction system was introduced into America a year ago through joint efforts of the Departments of Commerce and Agriculture. It has already resulted in a number of similar applications for tower construction in the United States.

This German experience with American woods for engineering structures opens up an important possibility for the American forest industries to expand the market for choice quality of American structural timber in foreign markets. It has given the American lumber exporters a new hope of rebuilding their export trade which has been so seriously curtailed during the years of the depression. - From Dept. of Commerce News Release

USE OF CALCIUM CHLORIDE IN FOREST FIRE CONTROL

Recent tests made at the Michigan Forest Fire Experiment Station show that calcium chloride is an effective fire retardant and that, under certain conditions, it can be used to advantage in combating surface fires.

For example, when it was applied in water solution to a strip in advance of fires at the rate of one-fourth to one-half pound (dry weight) per square yard, it effectively stopped running fires in grass and sweet fern cover in every case except where the fire blew across the line or burned across in rotten wood or unusually heavy litter which the chemical solution failed to penetrate.

In regions of frequent precipitation calcium chloride is useful only as a temporary expedient since, owing to its ready solubility, even a light rain renders it ineffective. Calcium chloride is also ineffective when applied dry, since it falls to the ground and hence does not affect the inflammability of the fuels which carry the fire.

Satisfactory results depend on the complete and uniform treatment of the fuels on the strip to be fireproofed. This is best accomplished when calcium chloride is applied in solution with a sprinkler or pressure sprayer. The ordinary back pack fire pump is not satisfactory for this purpose, owing to its low and fluctuating rate of discharge.

While not likely to supplant ordinary methods of fire control, calcium chloride will be found useful in the establishment of emergency fire breaks and lines from which to backfire where man power is limited and plows are not available. Its usefulness, however, is confined to indirect attack, since it has no particular advantage over water when applied directly to burning material. - Technical Note, Lake States For. Expt. Sta.

THE HUMBLE BEGINNINGS OF A GREAT EXPORT TRADE

According to Nails' "History of the Jamestown Colony" the first export of lumber from the American Colonies was made in 1608: "On April 10 Captain Christopher Newport commanding a Virginia Company's ship sailed from Jamestown loaded with iron ore, sassafras, cedar poles and walnut boards and arrived in England on May 20."

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Vol. XVIII No. 16 Washington, D. C. July 30, 1934

MORTALITY IN SELECTIVELY CUT NORTHERN HARDWOODS

By F. H. Eyre and R. H. Blythe, Jr., Lake States For. Expt. Sta.

The forest provisions of Article X of the Lumber Code transferred selective logging from the realm of experimentation and theoretical discussion and brought it nearer to actual woods practice. Some of the conclusions regarding the advantages of selective logging, which in the past provoked no controversies, are now being put to a searching and severe test of practicability. This is a good sign and unless selective logging can stand up under this test, it will not become the generally adopted woods practice in the northern hardwoods.

This article will be limited to the discussion of one phase, viz: mortality of trees left after selective logging. Some claims have been made that the mortality of the residual stand in selective logging is so great as to make selective cutting entirely impracticable. There are so few accurate observations, however, on any large scale, as to the effect of selective logging on the growth and mortality of the remaining stand, that it may be worth while to present here the results obtained at our Upper Peninsula Branch Station.

There we have conducted cutting experiments for the past seven years. In the fall of 1926, we started to test different degrees of partial cutting in northern hardwood forests, such as are characteristic of the Upper Peninsula and northeastern Wisconsin. We have cut over since then about 120 acres under six different degrees of selective logging in the hardwood type. To bring out the contrast, we have also made clear cuttings, totaling 10 acres, at one extreme and have carried on observations on about 50 acres of virgin forest at the other extreme. We have, therefore, the entire range from clear cutting to virgin conditions.

On each of these cuttings, sample plots of one to four acres have been established. These are measured at five-year intervals to determine growth and mortality. Such records are now available for six methods of cutting. While these permanent sample plots may be sufficient to determine growth, it was felt that for determining mortality they were too small. For this reason, beginning with 1929, or 5 years ago, mortality was studied over larger areas. The entire cut-over area, and in addition 50 acres of virgin forest, were covered by a 100 percent tally of mortality. This has been repeated each year. Altogether 104 acres have been under observation for 5 years for the study of the single factor, mortality.

It must be emphasized that the study was confined to trees which actually died some time between two consecutive observations. In other words, we made post mortem examinations and not life expectancy predictions.

Before the study began, all trees that were dead were clearly marked so as not to confuse them with trees which died subsequently. In this way we were able to determine the actual mortality that has been taking place under the different degrees of cutting and in the virgin forest.

The striking thing is that in all our true selective cuttings, in which from 24 to 62 percent of the volume was removed, the average annual mortality was less than ½ of 1 percent, or about 29 board feet. As the average stand left ranged from 5,000 to 10,000 board feet per acre in these cuttings, it can readily be seen that the mortality has been negligible.

The greatest percent of mortality, as was to be expected, was found in the area from which all merchantable sawlogs and cordwood was removed. Of course, this loss was not in board feet since there was no sawlog material left. What is most significant, however, and which speaks in favor of selective cutting, is that in the uncut virgin forest the annual mortality was greater than in selective logging, and the average annual loss for the two virgin areas under observation amounted to 140 board feet per acre per year.

But what did the trees die from? Fortunately, the records maintained in the study classified the causes of death. Out of a total mortality in the selective cuttings of less than ½ of 1 percent, over half was due to trees being broken by the wind. About ⅓ of the trees lost were uprooted and less than 1/5 died standing. In other words, the mortality due to decadence alone amounts to only about 1/10 of 1 percent, a totally insignificant amount.

Of course, there will be some mortality under any method of cutting. But if a satisfactory growing stock of sawlog material is maintained and mortality is greatly exceeded by growth, then selective logging can certainly be justified. We come now to a consideration of the growth obtained on the cuttings at our Upper Peninsula Station.

Remeasurements after a 5-year period of our sample plots show the average net annual growth--that is, growth in excess of mortality--to be from 2 to 3 percent or from 160 to 245 board feet per acre per year.

In the uncut forest, the net annual growth was determined to be 191 board feet per acre on our permanent sample plot. This may seem to be contradictory to the general assumption that in an uncut virgin forest, growth balances decay. This, however, is the actual figure obtained on our one-acre permanent sample plot and may be explained by the fact that the so-called virgin forest at our Station is not entirely virgin. The white pine was cut out some 30 years ago and within the last 20 years some elm and basswood were taken out. The present stand has, therefore, probably not reached its maximum development. Then, too, it is probable that some of the decay that is taking place in the virgin stand cannot be detected by any visible evidence and does not appear in measurements of growth.

The interesting fact, however, is that the growth on the 12 inch diameter limit cutting (commercial clear cutting), expressed in percent, was the largest of all, but actually it was only 98 board feet. Although the rate of growth was high, the growing stock had been so depleted by cutting that very little merchantable material was produced on this area. In the clear-cut area, there was no growth that could be computed in board feet. In all other cuttings, the growth in board feet exceeded mortality but it was greatest under selective cutting where a good growing stock was left on the ground.

Does mortality, therefore, constitute a serious handicap to selective logging? Our data, carefully collected over a number of years, say emphatically, NO! On the contrary, selective logging, if properly carried out, can be the means of decreasing mortality and increasing growth by taking out in the first cutting all trees that are likely to succumb in the course of the next 20 to 25 years.

IS THE CCC JUSTIFIABLE?

By George Tomb, Foreman E. C. W. Camp 51, Pine Grove Furnace, Pa.

The outsider has various opportunities to learn about the operations of a CCC Camp and its purposes. During the past year dozens of articles have been written on the subject - some technical and some intended for general information, but with one or two exceptions none actually depicted the intrinsic value of this project as it is to be witnessed at first-hand.

Primarily the work had its advent because of insufficient employment for the hundreds of thousands of young men between the ages of 18 and 25 located throughout the country. Something had to be done about a condition so unwholesome and deplorable, if not actually dangerous. Regardless of a young man's parentage and early home training, chronic unemployment was felt to be in no way conducive to the moulding of citizenship such as has been inherent with America since its origin as a nation.

Hence with the welfare of young America in mind the Civilian Conservation Corps was brought into existence as an emergency measure which was to be an experiment both ambiguous and costly. The boys were to be used in a reforestation capacity, which to the uninformed meant tree planting and removing deadened and diseased timber from our State and National Forests.

Since that early period, reforestation has come to be something much different perhaps from the original plan, for while the work is invariably confined to forest localities its ramifications are multitudinous. A boy expecting to use a crosscut saw or an axe may have served a double enlistment in a camp and at no time had the opportunity to use these instruments of destruction or construction as the case might be. His work because of some particular ability, in all probability found him better fitted for road building, stenography, or truck driving. In any event, the changes wrought in his philosophy, industry, and perspective have been undeniably good.

In retrospect to visualize the first flight of city mountaineers, urban hill billies, or gas house district axe wielders, as we saw them a year ago, is a sensation both painful and yet encouraging.

These newcomers, to anyone familiar with work along manual lines, were well-nigh hopeless - many had never worked or had any desire to consider effort along that line seriously. Those who were seasoned for work imagined that the Federal Government was magnanimous to the degree of financing a six months' outing and didn't take the working part seriously.

It's an even gamble that on April 1, 1933, had the 200 recruits, the vanguard of the hundreds to follow, been sent out to work without a supervisor that in less time than an hour an observer could not have found 25 at work, even listlessly, for a great majority thought they were being mistreated when a supervisor kept them plugging along for some six hours of actual work.

It was at this period that the purpose of the work and the vision necessary for its perpetuation were lacking, since the boys knew not what was expected of them and cared less provided they ate regularly and worked little. Today many of these original boys, the great majority in fact, have learned something of unforgettable value to themselves - they have learned square shooting, honorable dealing and, above everything else, the realization that a man must work to live and in so doing he has found character which in the future will prove an asset which will see him through - something utterly impossible in many cases a year ago.

It's a strange and inexplicable pride which a supervisor learns to feel toward loyal and dependable workmen. We have in this camp a slogan used humorously by many, but acually brought into existence because of its originator's feeling of pride towards his crew's ability to cooperate. A certain supervisor once said in reference to his crew "My men will work" and was not a little aggravated because someone doubted such a statement. It is doubtful if there is a supervisor on the job who feels differently on this subject.

To be able to assign work or duties to a crew of men and know full well that they will not break faith with you is something any leader of men can feel proud of. Any man can stand over a gang of workmen and by threat of discipline and application of unlimited patience get a reasonable day's work out of them, but when he has a crew regular enough to do their work during some temporary absence on his part, then an unprecedented something has come out of the CCC enterprise so valuable that the next generation alone can fully appreciate it. - From The Pennsylvania Dept. of Forests and Waters Service Letter.

ONE FIRE PROBLEM SOLVED

By Gerald S. Horton, Chippewa

A fire occurred on Memorial Day on the Cut Foot Sioux District of the Chippewa National Forest which was entirely different from an other fire ever experienced in that region. The fire occurred in a stand of aspen poles with a heavy understory of brush. There was very little ground vegetation present. The forest floor consisted of a heavy mat of hardwood leaves which had been compressed into a compact layer by the snows of the previous winter.

An examination of the burn indicated that over an area of approximately 2 acres a great number of small fires had occurred. It was estimated that there was at least one small spot fire to every 6 sq. ft., or 500-700 fires in all. A few spot fires had attained a size of several square feet, but the majority of them were very small, ranging in size from 2 to 6 inches in diameter.

An analysis of the situation showed that obviously the fires must have been man-caused. Inasmuch as the complete area was burning in spots when discovered, it was also evident that all of the spot fires must have started almost simultaneously. It was almost impossible for us to conceive how any person or persons with any type of instrument could have ignited the fires simultaneously. The possibility of the use of some chemical sprayed over the area was considered. Was it possible that an aeroplane had ejected burning oil? These and other solutions were discarded as being impossible.

The solution, which, was evolved by piecing together bits of information from the men working on the fire, is as follows: It was noted that the forest floor on adjacent areas was covered with a thin film of "Aspen Cotton", formed by the accumulation of a great number of aspen seeds with their thin hairy or cottony attachment. This film of "Aspen Cotton" over the forest floor was highly inflammable and when ignited would spread fire almost as rapidly as gun powder.

The "Aspen Cotton" was ignited probably by an unextinguished match or cigarette butt, or possibly by an extracted cartridge from a rifle. It was ascertained that a party of 2 or 3 young men had been hunting woodchucks,for which there is at present a bounty of 15 cents, in that locality that afternoon.

The "Aspen Cotton" had accumulated into a continuous film due to the lack of rain during the seeding period of aspen. We had experienced an unusually dry spring with a period of almost one month without any rain at all. In normal years the "Aspen Cotton" would not have a chance of accumulating to such a density for the rains would obliterate it.

The fact that such a film of "Aspen Cotton" can accumulate in a very dry spring is of serious moment to us in the Lake States region where we have many stands of aspen. In the past we have considered our aspen types as constituting one of our lowest fire hazards. In such a dry spring as we experienced in 1934 our aspen types jump from very low fire hazard to very high hazard types.

THE USE OF SOLDIERS IN SILVICULTURAL OPERATIONS ABROAD

By E. N. Munns, Washington

Upon the initiative of Prime Minister Mussolini, a semi-military organization was formed in Italy in 1922 under the name of "La Milizia Forestale," which has since then done sowing, planting, and erosion control work on a large scale. This organization also has helped to institute reforestation classes and to encourage planting by school children. Thanks to the efforts of this unit, nearly 250,000 acres were planted in 1932 and a somewhat similar area in 1933.

However, the use of regular troops in silvicultural work was first inaugurated by Captain Frans Bull of Norway, in 1905. The Norwegian military authorities and forestry organizations adopted a favorable attitude towards the plan, so that since 1906 Norwegian troops have planted from 100 to 600 acres and have sown from 750 to 1000 pounds of seed annually. A special six weeks to two months' school is held for selected men who are given short courses in forestry work including besides planting, such things as swamp drainage, cultural operations, and methods of cutting timber.

A somewhat similar plan is followed in Sweden, where young men serving their compulsory service are given short term forest work.

Following these examples, Finland started a similar movement in 1931. The soldiers chosen for this work are placed under the general direction of local forestry boards. In the three years since the plan was started, 8,000 men have been so used, about 250 acres of State forests have been planted, and 300 pounds of seed have been sown. Finnish comment is that forest work is looked upon as a very desirable phase in the soldiers' routine work.

Since 1932, troops have also been employed in forest work in Estonia. This work differs from that in other countries in that the effect is to improve the landscape. Tree planting is a major activity along roads, about schools, houses, and barracks. Some work has also been done on dune control.

Somewhat in line with the above, word has recently come from Russia of another type of organization, called the "Agro Forestry Improvement Organization." The activities of this unit are much the same as those of the CCC and the Italian "La Milizia Forestale". Soil erosion control, shelterbelt planting, reforestation, revegetation of depleted ranges, and similar lines of activity are part of the plan. A very large part of the work is located in southern Russia (Ukraine), particularly in the valleys of the Don and Volga. Much of the plan is devoted to the inter-relationship of forests and agriculture, a prominent place being given to shelterbelt planting.

DROUGHT-RELIEF GRAZING

Reports on drought-relief measures on National Forests in the West have confirmed earlier judgments that there would be little opportunity to increase numbers of stock on the National Forests, which were likewise affected by drought although not to the same degree as outside ranges. Relief has been principally in the form of allowing distressed permittees on the ranges from ten days to two weeks earlier. In a number of cases where watering facilities have failed on range lands adjacent to the National Forests, non-permittees have been given the privilege of driving their stock in and out to water near the boundaries. In Utah, Idaho, and Nevada the National Forests shared liberally in extensive water-development programs under FERA.

An especially serious situation developed in the southwestern counties of Wyoming, involving some 75,000 sheep and about 6,000 cattle. There resulted a strong and insistent demand to open up game ranges in the Tetons as the only source of temporary relief. The agitation resulted finally in a conference on July 10 at Ogden attended by about 50 sheepmen, some cattlemen, and the Forest officers concerned. After a thorough review of all the conditions, which included the present uses by cattle, sheep, and game on the Teton areas, the subnormal conditions of forage, and the conflicts which would result, it was decided that to admit additional sheep to the Tetons, if that were otherwise advisable, could not relieve the emergency in any important degree. The livestock people then wired the Federal Emergency Relief Administration, asking that the four southwestern counties of Wyoming be placed in an emergency drought-relief area.

The provision made for 46,000 cattle on the Lake States Forests has not materialized except for about one-tenth of that number. Rains relieved the emergency in those States.

The principal relief has now developed in Region 8, where a number of areas have been opened to special emergency grazing of drought cattle purchased and moved from various drought States by the Drought Relief Administration. On the recommendation of the Regional Forester, authorization has been granted to accommodate 15,000 of these cattle in three Georgia and Florida Forests and purchase areas. In one instance, the Relief Administration will undertake an extensive program of fencing to facilitate the temporary handling of these cattle, which being Government property, have been authorized free grazing by the Secretary. These cattle come from various States, such as Kansas, Missouri, Iowa, Nebraska, and other States farther to the Northwest. The plan is to slaughter and use them for Federal-relief rolls this winter. Extensive meat-canning operations are programmed.

Severe drought conditions continue over a large part of the West.

Wyoming is reported in an especially critical condition. Relief Administrator Will G. Metz of Cheyenne wired the FERA July 16 that better than half of the State had been reduced to practically a desert condition in the last week. At least 125,000 cattle would have to be moved out of Crook, Campbell, and Weston Counties. Unless relief could be found, the livelihood of most ranchers would be sacrified and that entire section of the State would be bankrupt. -- J. H. Hatton.

YE EDITOR DISCOVERS

By Executive Order 9677, dated June 30, 1934, the President abolished the National Planning Board of the Federal Emergency Administration of Public Works and also the Committee on National Land Problems. Instead of these two organizations a new organization was created, to be known as the National Resources Board, to which is transferred all of the powers, duties, records, personnel, equipment, and funds of the National Planning Board.

The personnel of the new National Resources Board consists of the Secretary of the Interior, Chairman, the Secretary of War, the Secretary of Agriculture, the Secretary of Commerce, the Secretary of Labor, the Federal Emergency Relief Administrator, and three advisory members, namely Frederic A. Delano, Charles E. Merriam, and Wesley C. Mitchell, who previously constituted the National Planning Board.

According to the Executive Order, the functions of the National Resources Board shall be to prepare and present to the president a program and plan of procedure dealing with the physical, social, governmental, and economic aspects of public policies for the development and use of land, water, and other national resources and such related subjects as may from time to time be referred to it by the President. The order specifically provides that the members shall submit the report on land and water use on or before December 1, 1934; which program and plan shall include the coordination of projects of Federal, State, and local governments and the proper division of responsibility and the fair division of cost among the several governmental agencies.

Perhaps as a result of this order the several previously existing programs of planned land use gradually are coalescing into a single program in that the Land Policy Section of the Land Program Division of the Agricultural Adjustment Administration is now joining forces with the National Resources Board with a view to the preparation of a single joint plan. These agencies expect to enjoy also the cooperation of the Chamber of Commerce of the United States, which likewise has initiated a land planning study.

According to all dependable information, almost one-third of the total land area of the continental United States apparently will serve a higher social and economic purpose through the agency of trees than in any other way. Recognizing that fact, Mr. Silcox feels that the Forest Service is under a peculiar and urgent obligation to contribute in maximum degree to the formulation of an adequate plan of systematic and permanent land use. As he sees it, this obligation can be redeemed, in part, through the Forest Service assuming responsibility for the assemblage of the information in relation to the actual or potential forest lands, and to that end he has asked the Regional Foresters promptly to initiate the necessary studies and conferences through which to develop a sound forest land program. As an aid to that objective, the Forester has formulated a set of guiding principles which shortly will be placed in the hands of the field officers.

In this case time is the essence, since the report must be in the President's hands on or before December 1. Mr. Silcox, however, feels strongly that the preparation of this forest land plan is the most pressing and urgent problem with which the Forest Service is now confronted and that accordingly the postponement of other projects, even of considerable importance, is not only justified but imperatively demanded.

Within the brief time available, it is of course obvious that precise figures and detailed analyses are out of the question, so that resort will have to be made to approximations and deductions in considerable measure.

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The Forester left Washington on July 19 for his first trip into the western Regions. He will first stop at the Halsey Nursery in Nebraska, where he will inspect the sandhill plantations, and will then visit the Black Hills and Harney Forests in South Dakota. Approximately a week will be spent by him in each of the other western Regions. He and Mr. Fechner expect to meet and make a joint inspection of ECW work in Oregon or Washington.

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The fire season is, of course, still young and anything may happen. We need not, however, be ashamed of the record to date. With a season beginning at least a month earlier than usual, and with acute drought conditions in certain spots, the area burned over on the National Forests to July 10 was only 14,000 acres above the average for the same period during the years 1931 to 1933, inclusive. As usual, the conditions are unusual. Freakish and unheard of fire troubles are occurring in Utah and other places where the fire danger normally causes little concern. Most portions of Regions 1 and 6 are amply supplied with moisture in the subsoil, in the vegetative cover, and in the litter, which has benefited by fairly copious rains during the last month or two. The combination of extreme drought and the hazard from timber stand improvement slash in such places as the Black Hills make the observer feel like holding his breath as he watches current reports. Southern California is suffering one of its extreme droughts, which, of course, means an advantage in the scarcity of inflammable annual growth but which may easily result in disastrous conflagrations later in the season when southern California fires normally choose to do their record-breaking stuff. In Regions 7 and 8 we benefit from the fact that normal fire weather is never bad everywhere at the same time. Moisture and related fire factors have so far been relatively good on the Atlantic Coast. The Lake States oscillate between extreme drought conditions prevailing in the Middlewestern belt and occasional fairly good rains, the effect of which is, however, temporary because of accumulated shortage of the ground water supplies and moisture content in vegetation and tree growth.

* * *

The weekly report of July 17 on men employed from Impnira and Devnira funds shows that a new high has been reached, with over 19,500 people employed on work covered by these two funds. Region 9 still shows the highest total number of man-weeks of employment since the inception of Nira work. With 10 percent of the total allotment, Region 9 chalks up a total of 83,000 man-weeks, or 15 percent of the total man-weeks of employment reported to date. Old Region 7 follows closely with a total of 77,000 man-weeks of employment. Its proportion of the total Nira allotments was 11 percent; its proportion of the total man-weeks of employment is 14 percent. Several other Regions have had a much higher proportion of the total funds, but none so far is credited with a higher number of man-weeks of employment given. Presumably the larger relative amount of timber cultural work being done in the eastern Regions enables these administrative units to make a better showing in terms of man-weeks of employment for a given sum of money expended. If it is assumed that the man-weeks which have been reported are all full five-day weeks, then the total cost per man-day, including all other classes of expenditure as well as wages, varies from a low of $4.31 per day in Region 9 to a high of $10.19 for Nira work in the Branch of Research. The average cost per man-day for all Regions, the Branch of Research, and the Biological Survey work is $5.90.

EMPLOYMENT VS. EXPENDITURE

If a major aim of the Nira allotments is to provide employment, the Forest Service is apparently making an excellent comparative showing as indicated by the following:

Cost per man on direct relief employment for the month of May 1934 for Forest Service and comparison with other Bureaus and Departments. Figures taken from the Federal Employment Stabilization Office Report, and secured by dividing expenditures for the month by the daily average number of men directly employed

Department or Bureau	Monthly Rate
Forest Service	
Roads and trails	$ 99.40
Physical Improvements	119.00
Chemistry and Soils	328.00
Public Roads - Federal Aid	211.00
Public Roads - Forest Highways	154.00
Coast & Geodetic Survey	142.00
Lighthouses	373.00
Geological Survey	152.00
Navy Yards and Docks	230.00
Dept. of Agriculture	200.00
Dept. of Commerce	197.00
Dept. of Interior	372.00
Navy Dept.	312.00

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SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol XVIII No. 17 Washington, D. C. August 13, 1934.

SHELTERBELT FROM CANADA TO TEXAS TO BE PLANTED IN DROUGHT AREA

To the Forest Service has been assigned the tremendous project of establishing a forest shelterbelt one hundred miles wide and extending more than 1,000 miles through the drought area from the Canadian Border to Texas. President Roosevelt is personally greatly interested in this program and, by Executive Order of July 11, 1934, has allocated $15,000,000 of emergency funds to the project.

Beginning at the Canadian Border, this protection forest belt will stretch down through the Dakotas, Nebraska, Kansas, Oklahoma, and into the Panhandle of Texas. The area immediately affected approximates 20 million acres, of which about 1,820,000 acres will be planted to trees. According to the plan of the project, windbreaks running north and south will be planted one mile apart, making approximately 100 parallel windbreaks in the 100-mile wide belt. Each windbreak will be 7 rods wide, covering 14 acres out of each square mile. Only the land planted to the shelter strips will be acquired by the Government through purchase, lease, or cooperative agreement. The areas in between these shelter strips will remain in private ownership and, consequently, farmers on this land will be able to produce crops and livestock under the most ideal conditions.

The ultimate cost of the project is estimated at $75,000,000. Over 90 percent of this amount will go to farmers, largely for employment of labor for plowing, fencing, planting, and caring for the trees. By direction of the President, Secretary Wallace has authorized the Forest Service to make expenditure for the present of only $10,000,000 of the $15,000,000 provided in the Executive Order.

One of the first steps will be the establishment of a chain of nurseries in the States concerned, using CCC help from the drought stricken area. The first year will be devoted principally to acquiring land, the collection of seed, establishment of water conservation and soil erosion work, and the perfecting of an organization. Only a limited amount of planting will be done this year. Large-scale planting of the windbreaks will be under way by 1936, and the entire area, it is expected, will be planted within the next ten years, at a rate of about 180,000 acres per year.

Although one of the primary objectives of the project is to provide relief to farmers and local population in the drought afflicted region, the long-time objective is to ameliorate the climatic conditions and mitigate the consequences of the periodically occurring droughts. This project is not without precedent. On the contrary, it is based upon the long-time experience of several European countries, notably Italy, Hungary, and Russia. In those countries, where shelterbelts have been used over a period of many years and on an extensive scale, farming enterprises have been stabilized and have succeeded even in the worst seasons when farmers in other areas have suffered serious losses to their crops through adverse weather conditions.

Administration of the project is to be set up on a permanent basis, utilizing to the full the technical and administrative resources of the Forest Service and cooperating agencies. Details of the organization are being worked out and will be announced in an early issue of the Bulletin.

AGAIN, "ECONOMIC SELECTION AND HIGH GRADING"

By Louis S. Murphy, Washington

Anderson in the Service Bulletin for May 21, commenting on Brandstrom's definition (issue of April 9) of economic selective logging seems to get off the track a bit. He says: "Surely a system of cutting in a ponderosa pine forest in public ownership, based upon the economic and social welfare of the present as well as the future generations, will vary materially from the cutting system in a privately-owned forest which is devised to yield the greatest net return for each acre logged. Yet, both may rest on economically sound procedure." Here, clearly, there would seem to be confused thinking which must inevitably lead to the divergence of views, which Brandstorm laments, as to what constitutes economic selection.

As indicated by the underscoring the system of cutting employed on the publicly owned forest is governed not by economic considerations alone but by considerations of social welfare as well as economic welfare. Of course, then, the systems of cutting will vary more or less widely depending on the relative weight given to the social welfare aspect of public forest management. "Perhaps," he goes on to say, "our thought is not uniform regarding 'economically sound procedure'". The "perhaps" in this statement seems wholly superfluous. It seems self-evident from the divergence in the premises that the respective concepts of "economically sound procedure" will show a corresponding divergence.

Thus, if two aviators both have an eastern objective but one of them has a northern objective as well, the latter might land but a few feet north of the former or he might land thousands of miles from him, depending on how strongly the northern objective was allowed to influence his flight.

Again, when attempting to compare what would be economically sound procedure on the public forest with that on the private forest, Anderson states what seems like a paradox, namely, that to follow strictly an economically sound procedure would in a measure fail and result to a limited extent in deterioration of the stand. Can a thing be economically sound that results in failure in any degree rather than in success? Here, evidently, there is a confusion of thought not alone as to economic vs. social welfare objectives but as to the relative importance of present and future profits. Brandstrom speaks of it being economically sound to conserve until maturity trees financially immature but with a high earning power. Anderson apparently overlooked entirely the qualification regarding high earning power. Obviously, to refrain from cutting a tree with low earning power, one that would be worth little more, if any, ten years hence than today, and which in addition would lower the subsequent earning power of the forest as a whole by displacing a more valuable with a less valuable species, would be economically unsound. It might even be economically sound to cut such a tree and take a present loss if the future gain promised to offset it.

On the other hand, considerations of social welfare might justify a public agency in refraining from cutting such a tree if a wood shortage was imminent, since, obviously, any wood even though not of the best quality would be better than none at all, whereas the lowered quality of composition of the subsequent stand which might result from its retention would be of but secondary importance from a welfare standpoint. This is just the policy we have pursued in late years in National Forest timber sales.

In general the fear of "government in business", as I see it, is not that in the conduct of its enterprises the Government will pursue the economic profit objective more relentlessly and more successfully, thereby showing up the inefficiency of competing private enterprises. Rather, it is that the government, by allowing social welfare to enter more or less into the conduct of its enterprises, will take less profit than private industry, or none at all, in order that the cost of its services can be put within the reach of the largest possible number of consumers. Economic selection to me does not signify high grading. Quite the reverse in fact.

TOTAL ACREAGE BURNED IN 1934 COMPARED WITH AVERAGE FOR 1931-33.
(DEVIATIONS FROM AVERAGE ON DATES SHOWN ARE INDICATED
IN ACRES, EITHER OVER (+) or UNDER (-))

Region	To May 20	To May 31	To June 10	To June 20	To June 30	To July 10	To July 20
1	- 1491	- 1540	- 1560	- 2219	- 2155	- 4251	- 6763
2	- 2987	- 3058	- 1216	- 925	- 870	- 52	+ 2429
3	+ 11205	+ 9278	+ 12267	+ 12255	+ 12741	+ 13395	+ 20835
4	?	?	?	+ 1878	+ 2747	+ 4021	+ 9353
5	+ 2770	+ 2996	+ 3843	+ 4112	+ 5655	+ 2149	+ 3712
6	- 4437	- 2974	- 3337	- 3491	- 5104	- 4021	- 5340
10	- 2	- 2	- 2	- 2	+ 57	+ 140	+ 354
Total	+ 8049	+ 5702	+11006	+11592	+12971	+10975	+24580
7 and 8	- 5954	- 5421	- 5602	- 6136	- 6082	- 6038	- 6698
9	+ 6526	+ 5487	+ 9442	+ 8178	+ 8701	+ 8680	+ 7041
G. Total	+ 9050	+ 5769	+ 14846	+ 14634	+ 15590	+ 13617	+ 24923

CHITTENDEN NURSERY

By C. A. Rindt, Nurseryman, Manistee

Just by way of breaking into print, the Chittenden Nursery on the Manistee Purchase Unit, Michigan, wishes it to be known that it is showing signs of progress, in fact it is developing into quite a sizable hole in the woods. It is practically all cleared except for piles of stumps and roots that just about cover the place and there are going to be a great many more piles of roots as the plowing progresses. The nursery has not been in existence long enough to have developed any problems or research work worthy of note but we will say that we have discovered that there is a very large percentage of a tree that grows under the surface of the ground.

We have ten acres in seed beds at the present time and have the water system over that area. The pumphouse is built and the pump is installed ready to deliver water as soon as a few minor parts of the underground line are installed. There are sixteen lineal miles of four foot seed beds (all seeded), six miles of Jack pine, seven and a half miles of Norway pine, and two and a half miles of white pine. The area that is in seedbeds was still woods and pine stumps at the middle of March, so things have been happening in the meantime in the Nursery. The Forest said it wanted trees to plant this fall and Chittenden Nursery said, "O. K." - From Planting Quarterly for July.

REGION FOUR'S NEW HOME

Outstanding in beauty, in arrangement of office and storage space, lighting effects, and in comfort the new four story Forest Service building at Ogden now houses the Regional Office and Intermountain Forest and Range Experiment Station.

The features: 80 office rooms; ample storage space; assembly room; library; air conditioning; two elevators, passenger and freight; floors of oak in offices and rubber tile in hall; lobby finished in golden travertine Utah marble; entrance of terra cotta with white bronze doors; furnace - gas fired but convertible to coal burning unit; heating of vacuum type and steam; outside of building is gray granite base with fire brick and terra cotta walls toned from brown to light tan; building rests on creosote piling; ground dimensions 105 x 105 feet; floor area 53,570 square feet. Location is one block east from Hotel Ben Lomond at 25th Street and Adams Avenue. This artistic structure has drawn the admiration of the public. On the day it was opened 3,000 visitors went through it from basement to green house on the roof.

For many years the old quarters have been inadequate. Now the Regional Forester can well be proud of the years of good licks he has delivered in behalf of suitable quarters. The building now houses the following:

	Regular Employees	Temporary
Regional Office	49	23
Intermountain Forest and Range Experiment Station	21	25

A picture of the new building appears on opposite page.

LEGISLATION OF INTEREST TO THE FOREST SERVICE ENACTED AT THE 2ND SESSION OF THE 73RD CONGRESS.

Appropriation Acts:

Act of March 26, 1934 (Public 131), which makes appropriations for the Department of Agriculture for the fiscal year 1935.

Act of March 28, 1934 (Public 141), which partially restored the cut in Federal employees' salaries made under the Economy Act of 1933. Five percent of salaries were restored beginning April 1, 1934, and an additional 5 percent beginning July 1, 1934.

The Deficiency Appropriation Act for 1934, which includes emergency appropriations for 1935. This was approved June 19, 1934, and is Public 412. Under this act $10,000,000 was appropriated for forest roads under Sec. 23 of the Federal Highway Act.

Act of June 18, 1934 (Public 393), which authorizes appropriations to provide for emergency construction of public highways and related subjects. Section 5 of this act authorizes an appropriation in the sum of $10.000,000 for the fiscal year ending June 30,

1936, and $10,000,000 for the fiscal year ending June 30, 1937, for the purpose of carrying out the provisions of Section 23 of the Federal Highway Act.

Acts authorizing additions to National Forests were as follows:

Act of April 14, 1934 (Public 161), which authorizes the President by proclamation to make additions to the Fremont National Forest in the State of Oregon.

Act of April 30, 1934 (Public 182), which authorizes additions to the St. Joe National Forest and extends the forest exchange act. This is the act in which the University of Idaho is particularly interested, in connection with its proposal to establish a State University Forest near Moscow, Idaho.

Act of May 3, 1934 (Public 194), which adds lands to the Pike National Forest.

Act of May 3, 1934 (Public 195), which adds lands to the Cochetopa National Forest.

Act of May 11, 1934 (Public 218), which adds lands to the Ochoco National Forest.

Act of May 17, 1934 (Public 228), which adds lands to the Boise National Forest.

Act of May 21, 1934 (Public 238), which adds lands to the Mt. Hood National Forest.

Acts relating to National Forest administration are as follows:

An Act doing away with continuing appropriations, approved June 26, 1934 (Public 473). This act does not affect continuing appropriations relating to receipts to States or to the 10 percent of receipts given the Forest Service for road improvements; neither does it interfere with cooperative funds.

An Act of June 14, 1934 (Public 351) which gives the Secretary of Agriculture authority to adjust claims to the so-called Olmstead lands in North Carolina, title to which was conveyed to the United States in settlement of a debt. There are a number of persons claiming adversely to the United States with respect to title to these lands.

Act of May 11, 1934 (Public 219), which restricted mining claims in the Mt. Hood National Forest by retaining title in the Government to the surface of such claims with the right of the mining claimant to use the surface for taking out any valuable mineral that might be found within the limits of the claim. This act is aimed at the prevention of the location of mining claims merely for the purpose of obtaining surface rights. A similar law was passed on May 26, 1934 (Public 259), which affects lands within the Wasatch National Forest from which the City of Salt Lake obtains its water supply.

Act of June 14, 1934 (Public 342), amended the Weeks Law by permitting States to give their consent to the acquisition of lands within the States through approval by the Governor after having obtained the consent of a majority of the Members of the Legislature. This law is limited in its application to January 1, 1935, and is intended to take care of present situations where the Legislature will not meet prior to that date.

An Act approved June 14, 1934 (Private 244), authorizes the payment to L. R. Smith of expense incurred by him in the construction of a road in the Blackfeet National Forest. This road was constructed to get out National Forest timber. When the actual operation began it was discovered that the timber was so defective that it did not pay to cut it. Since the road is of use to the Government in administering the forest and Smith was not able to recover the cost thereof from his timber operations, it was thought only fair to recompense him for expense incurred in building the road.

On June 28, 1934, the so-called "Taylor Bill", to authorize the Secretary of the Interior to regulate grazing on the public domain, was approved by the President. This measure does no directly affect National Forests. There were certain features in the bill, however, which seemed to the Forest Service to be objectionable but they were acceptable to the Department of the Interior.

The President, on June 28, vetoed a bill to convey approximately 40,000 acres from the Harney National Forest to the State of South Dakota, for a State Park. He also vetoed Senate Bill 3092, which would authorize a suit in the Court of Claims to compensate the

Heirs of James Taylor, a deceased Indian, for certain lands claimed by them now a part of the Nantahala National Forest. This bill as drawn was not fair to the Government.

The Act of June 22, 1934 (Public 448), which amends the Civil Service Retirement Act of May 29, 1930. This act enables an annuitant to name a beneficiary, and in case no beneficiary is named provides a method of payment for any accrued amount due the annuitant at the time of his death. It also provides for payments where an employee has died without having attained eligibility for retirement. Finally, it provides for payments due an employee who has become mentally incompetent. This act becomes effective upon the transfer of Civil Service retirement functions from the Veterans' Administration to the Civil Service Commission as provided in Executive Order of April 7, 1934, and amended by Executive Order of June 5, 1934.

Act of June 19, 1934 (Public 432), which establishes a National Archives of the United States Government.

The following acts relating to the conservation of wild life were passed:

The Act of March 10, 1934 (Public 120), authorizing the establishment of game sanctuaries within the National Forests.

The act of March 10, 1934 (Public 121), authorizing investigations respecting wild life.

The Act of March 16, 1934 (Public 124), supplementing the migratory bird conservation act and providing for funds for the purchase of lands for refuges through requiring hunters of migratory birds to purchase a license stamp for each season.

YE EDITOR DISCOVERS

The ten day fire report for the period ending July 30 shows that we were then holding our own pretty satisfactorily considering the nature of the season. Total area burned inside the National Forests was only 24,000 acres greater than the average burned to the same date in the years 1931 to 1933, inclusive. Telegraphic reports, however, announce many lightning fires and widespread fire fighting activity, and we may not be holding our own with the average of previous years when the reports for the end of July come in.

In the June 27 issue of the New Republic, Robert Marshall writes of the Forest Service: "On all of its lands it has developed a system of fire protection truly amazing for its success in the face of almost insuperable difficulties." If the fire record at the close of 1934 is only slightly worse than the average of previous years, Mr. Marshall will have no cause to amend his statement about our "amazing success" in fire control. He might even be justified in using a stronger adjective to describe our success.

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On July 30 representatives of the Forest Service conferred with Dr. Tugwell regarding appropriation estimates for the fiscal year 1936, to be submitted later on. In the main, Dr. Tugwell was sympathetic toward the Forest Service view of the magnitude of the job ahead, but pointed out some of the difficulties which must be experienced when our estimates are submitted to critical review by the Bureau of the Budget.

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About a year ago the Secretary of Agriculture formed an inter-bureau committee on genetics. His idea at that time was merely to discuss with its members various questions in the particular field of genetics, in which he is personally very much interested. Several meetings were held in which the Secretary actively participated. In one of these the idea of developing a plan for genetic work in the Department of Agriculture was advanced. Since then several meetings have been held at the request of the Secretary, and a comprehensive program for the Department is being formulated.

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The number of men employed from Impnira and Devnira still tends upward. The reports for the week ending July 30 show 20,302 as the total number of employments at that date. Whether the total will go any higher before it takes the big slump at the end of August is a subject for interesting speculation. Region 9 still carries the banner, with the largest total number of man-weeks of work reported. The average for all cost per man-day drops slightly, as would be expected during the close of the first Nira year. The average cost per man-day for the entire Service is now $5.80 against $5.90 on July 17.

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Impnira allotments for Blister Rust Control in Idaho, eastern Washington, and western Montana are giving out and camps will be disbanded between August 1 and August 10, although the blister rust season continues until the wild currants and gooseberries drop their leaves in September. Efforts to secure additional Public Works funds have been unavailing. Employment of thousands of men on this work has an intimate relation to relief rolls handled by FERA. Efforts have been made to secure special allotments from FERA in order to keep men on productive work who would otherwise fall back on local relief rolls. At the time this is written, these efforts have been unsuccessful, but one further attempt in this direction is being made by Dr. Tugwell.

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Results of a three-year series of actual grazing tests conducted by the Central States Forest Experiment Station and the Purdue Agricultural Experiment Station to determine the actual carrying capacity of farmwoods are discussed in Bulletin 391, "Woodland Carrying Capacities and Grazing Injury Studies," recently published by the Purdue University Agricultural Experiment Station, Lafayette, Indiana. The important facts brought out by these tests are summarized as follows:

(1) Under present grazing practices the actual forage production in farmwoods is insufficient to maintain animal weights over a six-months' season.

(2) Continued grazing such as generally practiced in the Corn Belt is further lowering the carrying capacity of farmwoods through the elimination of the better forage plants.

(3) The timber producing capacity of the farmwoods is gradually destroyed through the repeated browsing and final elimination of tree reproduction thus preventing the natural regeneration of the stand.

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George A. Barker, of the Branch of Engineering in the Washington Office, is in possession now of a patent for an apparatus to detect forest fires. The object of the invention is to provide for an automatically-controlled apparatus to detect forest fires and to transmit this detection to some central office. It also is to provide for a continuous 24-hour detection and a central reporting station for determining the location of fires.

The principle of the patent is a photoelectric cell which may be sensitive either to light or to heat, or to both, and so sensitive that a candle at a considerable distance will be automatically recorded.

Mr. Barker is now dealing with some of the large electrical supply houses with an idea to putting his device on the market.

LOOKING FORWARD

Ranger Jones,
Care Service Bulletin.

There is one important point you overlooked in your contribution to the Service Bulletin of June 4. How will the present uniform look to people seventy years hence?

I recently asked a photographer to make prints from a tintype picture of a great-grandparent of the present family. I felt it necessary to explain to him that the clothes shown in the picture were not a comedy costume, but merely what all people of that day wore when dressed in their best.

In a consideration of the Forest Service uniform we should decide whether or not we want our great-grandchildren to be able to strengthen their apology for OUR pictures with the statement that "ALL PEOPLE" of our time "dressed that way".

GROVER C. HOUGHAM,
Clerk--Roosevelt.

NATIONAL RECREATION CONGRESS

Many questions relating to parks and forests will be discussed at the 20th National Recreation Congress which will be held in Washington, D.C., October 1 - 5, 1934, under the auspices of the National Recreation Association. The general theme of the conference will be recreation's part in abundant living.

What parks and forests are doing for abundant living, nature study, national, state and municipal camps, recreation engineering, and hobbies are some of the problems to be reviewed at the section meetings.

Recreation in the new deal, the labor movement and recreation, activities for high school and college youth unable to secure employment, professional training for recreation leaders, adjustment of recreation programs to emergency conditions, what people want to do in their leisure, and cooperation between educational and recreational agencies, are a few of the tentatively selected topics for the congress. The crafts, music, drama, social recreation and activities for women and girls will be subjects of special meetings.

Nationally known speakers are expected to discuss recent social trends in relation to recreation, adult education, national government service through recreation, constructive economy in government, and other themes.

The National Recreation Association which is sponsoring the congress was organized in 1906 by Luther Halsey Gulick, Henry S. Curtis and others. One of the first organization meetings was held in the White House at the invitation of President Theodore Roosevelt.

Pay Day? - Oh yeah, sez you: Received check 11:45 A. M.
Deposited check 12:05 P. M.
Installment on car 12:10 P. M.
Installment on refrigerator 12:15 P. M.
Light Bill - 12:30 P. M.
Light lunch - 12:35 P. M.
Goodbye check! Come again soon.

L.E.A. in R-4 Bulletin.

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT. xxx THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. III No. 18 Washington, D. C. August 27, 1934

"NOT YET VALUE CONSCIOUS"

By M. R. Scott, Washington

Mr. Kylie's article under this title in the February 12 edition of the Bulletin brings to the fore a problem which has been discussed (and cussed) many times, especially by the accounting organization. We believe the members of the Service are "value conscious" but it requires much more than value consciousness to produce the kind of results to which Mr. Kylie refers.

The Service has advanced steadily during recent years in its methods of accounting, including cost accounting. The installation of a system of cost accounting based on advanced ideas is progressing on schedule but represents a sizable undertaking. It has been necessary to install certain sections first to provide the more urgently needed information; other phases have been temporarily deferred, including the evaluation of "Resource Values" of which Mr. Kylie writes.

Let us review what we have and what we need.

(1) We recognize at present the Timber, Grazing, Lands, Recreation, Fish and Game, and Water resources, each of which has what we might term dual investment values. For instance, in the case of Grazing we have our Grazing or forage value and the value of all range improvements, which tend to increase the value of our grazing resource. (Plus a share of general improvements necessary to administer the work.)

We also recognize the "resource" classes of Protection and General. These have no "basic" resource value, and the total value is represented by the improvements and other investments. These "resource" classes might be termed "contingent" or "undivided" since they exist only to serve other resources and all charges resulting will, in turn, be transferred to the regular accounts. The only reason for retaining them in a separate class is that they affect more than one regular resource and are not readily chargeable direct to a major class.

The first class is also overlapping. Water benefits all other resources; timber practically "makes" the recreation resource; lands contribute to all resources. One could go on indefinitely, but I will attempt to stay on the main track.

Information now available will tell us how much and for what purposes money is spent and will furnish any required data regarding investments for which we have expended moneys. This same information is available to the public.

Do we need more? Mr. Kylie says "yes", and, provided additional information can be put to profitable use, I also say "yes".

Let us assume that we do have need for a full and complete accounting; one which will give us the entire value of our investments and one which will give us our entire costs.

The first step would be to determine the values of lands, timber stands, water supply, fish, game, land-grazing and land recreation. In order to be of use within the Service these would need to be computed by Forests, or possibly by ranger districts. No doubt each of us has ideas as to how this could be accomplished and no doubt many of them would be workable. A definite line of procedure would have to be determined by a committee of forest officers representing the several divisions of the Service. Absolute accuracy would neither be possible nor required but the same procedure should be observed in all sections to insure uniformity. In other words, we would be consistent even though we might be wrong. Gross errors could be adjusted as correct data are available. The results under any system would eventually be brought to an acre or percent-of-total-value basic to allow for distribution of cost items affecting more than one resource investment and for purposes of comparison.

For the sake of illustration only, I will use the "values" as listed by Mr. Kylie for part of the resources and then I will attempt to include sufficient data to complete the picture as to income and cost, following one of several alternative methods. This will possibly help us to view the major phases of the problem at a glance. It is subject to plenty of criticism and maybe the readers will not agree with the formula -- maybe I wouldn't myself!

In all seriousness, though, if we are sure we need such information and that the results obtained will justify the cost of securing it; and, if we are willing to abide by the results whether it be black or red, profit or loss, then let us not only be "value conscious" but let us knuckle down to the job -- determine what we want and how best to get it. Procedure can readily be devised for handling the mechanics.

It should be noted in connection with values given in the table that most of them are subject to change. For example, the value of timber stand increases with growth ,diseases with cut and loss through fire, etc. Recreation values would possibly increase as more people visit the forests, closing of grazing for game refuge purposes would call for a transfer of Investments from grazing to fish and game. Fish and Game would, of necessity, have to be considered along with recreation to secure satisfactory results.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Resource	Basic Value*	Improvements, etc.	Total Value	Annual Income	Annual Costs	Profit or Loss (current year)	Profit or Loss (cumu-lati
Timber	$275,000,000 (value of present stand)	Cost of structural improvements, planting stand improvements, tree disease and insect control, fire protection, plans, surveys, equipment, etc.,whenever of investment nature (and share of all "General" investments, such as roads, trails, ranger stations)	Total of columns 2 and 3	Sale value of timber cut plus paid trespass plus value of timber used in Land Exchange	Direct expenditures of time & money for "Timber" plus (1) share of Overhead, (2)Mauntenance and depreciation on all timber investments including loss of timber through fire, and including investment value of timber cut ,(3) share of maintenance & depreciation of "General" investments such as roads, ranger stations, etc.-(charged from all units-Forests to Forester's Office)	?	

(1) Resource	(2) Basic Value*	(3) Improvements, etc.	(4) Total Value	(5) Annual Income	(6) Annual Income	(7) Profit or Loss (current year)	(8) Profit or Loss (cumulative
Recreation & Fish & Game	)$131,267,000))----?)	Cost of camp ground improvements, propagation of Fish & Game, value of areas set aside as game preserves, wilderness areas, etc., Fire protection, plans, surveys, (and share of all "General" investments such as roads, trails, administrative improvements)	Total of columns 2 and 3	Number of visitors of all classes multiplied by an assemed annual entrance fee of say 25 cents plus actual Federal income from such special uses as summer homes and from Fish and Game	Direct expenditures of time and money on account of recreation, Fish & Game including "P.R." plus (1) share of overhead, (2) Maintenance and depreciation on all Recreational and Fish & Game investments, (3) share of maintenance & Depreciation on all General investments such as roads, trails, etc. (From all units-Forests to Forester's Office)	?	?

(If State income from Fish & Game is included then we must also include State Expenditures)

Columns 3, 5 and 6 show no money values. These data could be secured in the most part from present records but have not been summarized in this particular form.

*Figures secured from Mr. Kylie's article.

SHELTERBELT PROJECT GETS UNDER WAY

Organization of the personnel to take charge of the new Shelterbelt Project and plans for beginning field work are now under way.

Assistant Forester Fred Morrell has been named Administrative Director of the project and Paul H. Roberts, of the Washington Office of Research, is to be Associate Administrative Director. Other transfers of regular personnel to the project so far made are: R. E. Clarke, Supercisor of the Rio Grande, to have charge of the Branch of Operation in the new unit: Alva Simpson, Supervisor of the Beaverhead, to have charge of the Branch of Lands; and William B. Ihlanfeldt, Auditor in Region 9, to be Fiscal Agent. Frank H. Carroll, who has been out of the Service for several years, is being reinstated as an assistant in Operation for the project.

A central field office is being established in Lincoln, Nebraska.

The technical work of the project is to be under the direction of Raphael Zon, Director of the Lake States Forest Experiment Station. Under the program the Station will have charge of locating the Shelterbelt and the individual strips in which planting is to be done, the designation of species to be planted, the preparation of specifications for the production of planting stock, and methods of planting. It will also conduct research work in connection with the project. These investigations will involve a study of the growth and behavior of existing plantations, as well as more detailed studies of the effect of trees and other vegetation on the lowering of water-table, etc. The Bureau of Chemistry and Soils will assist in the study and classification of soils within the Shelterbelt region, the Bureau of Plant Industry will cooperate extensively in technical service and in the use of its established nurseries and other facilities, the Bureau of Entomology and Plant Quarantine will probably aid in meeting insect problems, and the Bureau of Biological Survey will cooperate in rodent control and wild life management.

The question of nursery stock is a troublesome one at the present time. There is available a small quantity of trees in the various Federal and State nurseries which can be used. In addition, some stock can probably be obtained from commercial nurseries, provided that this stock is suited for shelterbelt planting. Although the plans contemplate establishing some nurseries in the region, it is quite possible that arrangements will be made with commercial nurseries to produce under contract, a considerable amount of suitable stock. Seed collection work is now under way, most of the seed being taken from trees in this region. Practically no direct seeding will be attempted. Cuttings will be made from such trees as cottonwoods and, to a limited extent, willows. The general plan is to use a number of species in each shelterbelt. The tallest trees will be planted in the center, with successively slow growing and shorter trees on the outside. The very edge of each windbreak is to be planted to shrubs.

Inquiries for information about the Shelterbelt plans are pouring into Washington from the region and from adjoining States to the east and west. Most of the letters received have been favorable toward the establishment of the Shelterbelt, although there are, as is the case in every project, doubting Thomases and scoffers. It is significant that the local State agencies and agricultural leaders are solidly behind the program.

The ten million dollars set up in the Executive Order and released by Secretary Wallace is available only for the current fiscal year. It is expected, however, that the President will take care of this new project in future years, as he has been personally interested in it. To him is attributed the remark, when this matter was under discussion: "Remember, boys, this is my baby." So far we have not heard that President Roosevelt ever left his baby on somebody else's doorstep or permitted it to die because of lack of nourishment.

MORE ABOUT UNIFORMS

By P. A. Thompson, Willamette

Reference is made to the Bill Jones article in the June 4 issue of the Bulletin.

Why the heck can't these birds sign their own names to their stuff? Bill, and I have a sneaking idea I know him, not only entirely misses the point of my article, but he assumes that no one who writes for the Bulletin really makes the most of his spare time. Since he both reads and writes for it himself he might be including himself in the group criticized. He also takes the opportunity to pat himself no gentle pat on the back anent his own habit of keeping his nose to the grindstone. Perhaps, just perhaps, his attitude might be less critical of other hard working forest officers and freer of bias if he should lean back in his swivel chair, for of course he rates one, and, forgetting for the moment his responsibilities, give serious thought to some of the abstract problems that confront us all.

Neither myself nor other contributors from R-6 are concerned with the possibility of being personally humiliated, since as I said before we are blessed with a sense of humor; neither are we worrying about the spirit of the Forest Service being crushed. Bill isn't the only one who has been in the Service twenty years. He apparently, however, hasn't the pride in his Forest Service that a man who has worked in it for twenty years should have. He apparently cannot conceive of men who can and do think of the Service first and self last.

"What of it?" He asks repeatedly - Just this! We've no uniform worthy of the name. The Standard dictionary defines the term "uniform" as follows: "A dress of uniform style and appearance, worn by persons belonging to the same body, company, or rank, for distinguishing them as members of that body." Before the war, before America became addicted to the "choke bore" type of breeches and before Forestry green became a nationally known and used color, back in the days when no one except Army and Navy men wore uniforms, I concede our Forestry uniform might have been acceptable. Under present conditions, however, it is neither uniform nor a uniform which succeeds in distinguishing us as members of the U. S. Forest Service.

I worked on a ranger district in 1912 when I had one guard to help me. I was the "ranger" to everyone and needed no uniform, since I knew every man, woman, and child on the district and practically no outsiders ever got into the Forest. Now the same district employs seven or eight lookouts and lookout firemen, a P.A., a packer, a truck driver, several patrolmen, a trail and road foreman, E.C.W. foreman, camp ground caretaker, etc. Several thousand tourists, fisherman, hunters and others visit the district each year and go away with some sort of an impression of the "ranger." Every Forest Service man they contact is a "ranger" to them.

"What of it?" Ask Bill. We need a uniform to distinguish regular, year-long officers from temporary employees. I say this, not because I give a whoop when I'm mistaken for a laundry wagon driver, but because the regular men of the Forest Service are more capable of representing our Service in a creditable manner in public contact and general business.

Bill's presumption, that anyone wants a uniform different from all other uniforms, is childish. Our present uniform is satisfactory in shape and color, but there are too many optionals, particularly hats and ties. Our real needs are two. 1. Uniformity. 2. Insignia to identify regulars from temporary.

The question of identification of grades in our regular organization is pertinent also considering the variety of our contacts these days, but this is secondary in importance to the two needs above mentioned. I repeat the time is ripe for serious consideration of the threadbare uniform question. Let's first decide whether we want a uniform or field clothes, as suggested by Cochran in a recent issue. If the answer is in favor of a uniform, let's have one.

THE C.C.C. IN PENNSYLVANIA

The C.C.C camps in the woods of Pennsylvania were an unusual feature of the spring season. For years foresters have dreamed of the day in forest protection when they would have at their beck and call unlimited numbers of men constantly available for fighting the enemy, fire - men not to be kept in the woods for fire fighting alone, idly waiting for fire, but men engaged in productive forest work.

Foresters have envisaged the woods developed as resources of the State, producers of timber, recreation, and health, requiring the services of hundreds of laborers to keep them productive, who incidentally would be available for their protection. Unlimited man power in the woods has often been looked upon as a solution of our fire troubles, but this is only part of the remedy.

This year the foresters of Pennsylvania had on hand in the 90 C.C.C. camps scattered over the State some 20,000 men organized and equipped for fire available at a minute's notice, and trucks, leaders, tools, and food supplies as required. Yet these camps were far from a full solution of our difficulty, though the men in the C.C.C camps fought fire on every occasion where they could be used to advantage by the foresters.

Actually they worked on only 275 fires, roughly 10 percent of the 2,800 that occurred in the State. Of course there were no camps in many of our most serious fire areas, such as the hard and soft coal fields. It is true that the help of the C.C.C. camps did reduce materially the cost of extinction per fire this spring, the cost this year being $34 per fire as compared with $43, the average cost for the last 10 years.

While the C.C.C. men were used as often as possible they were not used to the exclusion of our regular organization, since it was considered unwise to allow the emergency conservation workers to cause the disruption of our permanent fire organization over the State. In all cases the two organizations worked side by side in the best interest of all concerned.

To the credit of the C.C.C. and somewhat to the contrary of some preconceived notions that greenhorns and nonwoodsmen are a menace when put into the woods, practically no fires were attributed to C.C.C. activities or the carelessness of the men in the camps despite the fact that some 20,000 of these were suddenly housed in our forest lands both for work and recreation. -- From an article by H. B. Rowland in The Pennsylvania Dept. of Forests and Waters Service Letter.

YE EDITOR DISCOVERS

Lands activities are so multiplying in number and volume as to necessitate at least a temporary increase in the personnel of the Branch of Lands. Ellery A. Foster, formerly ECW inspector in Region 9, has become a permanent member of the Branch in charge of the Office of Land Use Planning. Ever since his advent in Washington, he has been busily engaged in developing the Forest Service part of the land use program which the President hopes to present next December.

To assist Foster in the undertaking and perhaps to further his extensive studies of potential farm forest subsistence homestead opportunities, to which he heretofore has given attention, Frank A. Ineson of Region 9 reported in Washington on August 15 for a temporary detail.

The land use plan is only one of the present problems of the Branch of Lands. As a basic feature of the Shelterbelt Project need exists for ultimately establishing titles or rights of use to approximately 100,000 miles of shelterbelt strips two chains in width, plus such nursery and other related areas as may be essential to the success of the project.

When the Taylor Bill program of management of the unreserved public lands gets fully under way, there doubtless will be suggestions or proposals for changes in land status, either through transfers of National Forest lands to established grazing districts or of inclusion of unreserved lands within National Forests.

Meanwhile the purchase program goes on apace, with a probable meeting of the National Forest Reservation Commission about September 15 in the offing. It is the present fond expectation that at that meeting Regions 7, 8, and 9 will break all previous records by submitting a purchase program in excess of one million acres.

During the past year recreational development has been a subject of action rather than discussion, tremendous progress having been made through the agency of the CCC, CWA, NIRA, and FERA programs. Apparently the time is approaching for a comprehensive determination of just what has been done to date and, more important still, the fixation of new goals and objectives of recreational development far surpassing earlier Forest Service conceptions in this field.

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When the Administration Building of the Department of Agriculture was built, fine kiln dried oak was laid on top of wet concrete. As a result, the oak flooring absorbed moisture and swelled, and great difficulty was experienced in getting the floor to stay put. Recently R. K. Helphenstine of the Washington Office of Forest Products visited the magnificent marble building which is to house the Supreme Court and found that the contractor was about to repeat the same performance. A hurry-up call brought Rolf Thelen from the Forest Products Laboratory to Washington. Thelen installed some instruments to determine when the concrete would have dried out enough that it would be safe to lay the flooring. This one item alone probably will save contractors and the Government a considerable sum of money.

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National Forest receipts for the fiscal year 1934 amounted to $3,314,691, an increase over 1933 of $688,642, or 25 percent. Timber sale receipts amounted to $1,499,216, resulting largely from renewed operations in sales contracted in previous years. Receipts from water power permits more than doubled, amounting to $124,946, as against $60,191 for the fiscal year 1933. Special use receipts amounted to $297,830 and other forest products including turpentine brought in $15,931.

These gains in receipts were offset to some extent by the decrease of over $100,000 in grazing fees. To meet emergency drought and other unfavorable conditions in the livestock range regions, the grazing fees were adjusted downward by Secretary Wallace, and grazing privileges for which the stockmen paid about $1,500,000 in the fiscal year 1933 brought considerably less in 1934. The figures for cattle and horses were $764,686; for sheep and goats, $579,624.

Region 3 was the only Region to suffer a net loss in receipts.

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The total number of men employed on Impnira and Devnira work is falling off rapidly preliminary to the nose dive the record will take presumably on August 25, the end of the first year of this work. The total number of employees rose to 20,263 on July 30, but had fallen to 17,909 on August 13. The reduction is due in part, no doubt, to men withdrawn from Nira work for fire fighting.

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Richard E. McArdle of the Pacific Northwest Forest Experiment Station is leaving the Forest Service on September 1. He will at that time become Dean of the University of Idaho Forest School.

DAMAGE TO YOUNG GROWTH BY LOGGING

One of the provisions of Article X of the Lumber Code is the protection of young growth in logging. It is, therefore, of interest to record the loss of seedlings and saplings during summer logging on the Superior National Forest, in a jack pine stand in which there was a mixture of black spruce.

The felling was done by CCC boys, many of them local woodsmen, under careful supervision. The skidding was done by experienced teamsters. In spite of all possible precaution, some 19 percent of the coniferous young growth (mostly spruce) between seedling size and saplings 1.5 inches in diameter, was destroyed in felling and skidding. If the logging had been done in winter some of the smaller, shallow-rooted seedlings at that time covered with snow might have been saved. On the other hand, summer logging, by stirring up the ground, encourages natural reproduction in this particular type where there is a thick layer of duff.

This information may serve as somewhat of a guide as to what may be expected in the way of loss in young growth even under careful logging in jack pine stands on the thin rock out-crop soils of northeastern Minnesota. - Technical Note, Lake States For. Expt. Sta.

INTER-REGIONAL TRANSFERS UNDER ROSTER PROCEDURE TO 7/20/34

Name	From	To
Nord, A. G.	Supervisor, R-4	Assist. Regional Forester, R-9
Degraff, Edward	ECW, R-3, Temporary	Ranger, R-9, Regular
Yates, Frank	Clerk, R-5	Ex. Asst., R-8
Ritter, Edward	J.R.E., R-4	Chief Party, R-7
Linch, Alex	Ranger, R-6	Acq. Asst., R-9
Bulfer, Dan	Ranger, R-4	" " "
Pike, Galen W.	J. F., R-2	Asst. For. Sup., R-9
Crowell, Ralph	Ranger, R-1	" " " "
Hughes, Bennett	R. O., R-5	F.M.R.O. R-8, Pending
Keene, W. L.	J. F., R-4	Sup-Staff, R-8
Hulett, Henry C.	J. F., R-6	Acq. Asst., R-7
Nelson, A. L.	Sup., R-2	Planting R. O., R-8
Neeman, Lloyd I.	Topog, D., R-3	Topog. D., R-8
Burkett, L. B.	For. Ranger, R-5	Principal For. R., R-9
McKinley, Raymond	Ranger, R-2	Acq. Asst., R-7
Foster, E. A.	ECW, R-9, Temporary	Lands, W.O.
Fischer, Wm. H.	Ranger, R-2	Acq. Asst., R-7
Ahlskog, Ralph H.	Nira, R-1, Temporary	Ranger, R-9, Regular
Porter, Gardner I.	Operation R.O., R-1	Chief Maint., R-7
Brooks, J. F.	Sup., R-1	Operation R.O., R-8, Pending
Neff, Lawrence	Temporary, R-1	Ranger, R-9, Regular
Collins, Robert	Temporary, R-2	Ranger, R-8, Regular
Clark, Donald	Sup., R-2	Sup., R-8, Pending
Dillon, W. B.	Ex. Asst. R-3	Ex. Asst. R-8, Pending
Wagner, E. E.	Clerk, R-6	Ex. Asst. R-8

DISEASE THREATENS CALIFORNIA LUMBER TREE

Threat of a disease of ponderosa pine, California's most important lumber tree, apparently epidemic in character in the Southwest, has caused the Forest Service to send out scouting crews to determine definitely if the disease has entered the State.

The disease is known as the twig blight and its origin and effects are still being studied by scientists. Two crews made up of wood pathologists familiar with the blight will work in the northern and southern halves of the State, covering as rapidly as possible all areas where ponderosa and related pines of the yellow pine group occur, both within and outside the National Forests and Parks. One party is now in the Tahoe National Forest and another in the Angeles National Forest. -- R-5 News Release.

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SERVICE BULLETIN

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WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT. ××× THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER.

Theodore Roosevelt

Vol. XVIII No. 19 Washington, D. C. September 10, 1934

WHAT OF THE YOUNG GROWTH?

By R. W. Cowlin, Pacific Northwest For. Expt. Sta.

The condition of the growing stock, the immature types, of the Douglas fir region of Oregon and Washington has been the subject of considerable speculation and some debate. Until recently authoritative information was lacking, but, with the completion of the Forest Survey, data on this and many other problems are becoming available. A recent summary shows the area of certain immature coniferous forest types subdivided into age and stocking classes.

Of the 29,002,540 acres of forest land in this region 7,048,724 acres, or nearly one fourth, is supporting second growth coniferous stands under 20 to 24 inches in d.b.h. and ranging in age from 1 to around 100 years. This area was mapped and classified in the field not only by type but by 10-year age classes and by three degrees of stocking: "well stocked", 70-100 percent of the area stocked; "medium stocked", 40-70 percent stocked; and "poorly stocked", 10-40 percent stocked. Areas having less than 10 percent stocking were considered as nonstocked. The stocking was measured by the stocked quadrat method. The following table summarizes the data on the immature types retaining the segregation by age classes and degrees of stocking:

Area of Immature Coniferous Types in Thousands of Acres

Class of Stocking	10-year age classes										
	10	20	30	40	50	60	70	80	90	100	Total
Good	537	437	536	489	314	242	221	60	26	18	2880
Medium	667	460	518	512	297	383	223	74	21	58	3213
Poor	430	106	92	106	71	79	36	28	1	7	956
Total	1634	1003	1146	1107	682	704	480	162	48	83	7049

The 10-year and 20-year age classes occur largely on cutover areas. Since it has only been in the last two or three decades that logging has been on a large scale in this region, it is only natural that these age classes, particularly the 10-year class, should have such a large acreage, although areas clear cut since January 1920 were not classified as to their restocking because of their unstable condition. Conversely, the 30-year and 40-year age classes and all older classes are chiefly the result of fire. It is surprising that there should be such a large acreage in the 30 and 40-year classes. Apparently in the latter part of the nineteenth century and early in the twentieth century fire took a heavy toll in this region. Douglas fir and associate species in this region on the better sites surpass 20 inches d.b.h. at around 80 to 90 years of age and this partly accounts for the falling off of the acreage in these classes, for types over about 22 inches in d.b.h. are not included in these tables.

The stocking shows a fairly satisfactory condition with about 40 percent of the total area well stocked, 46 percent medium stocked, and about 14 percent poorly stocked. The distribution of the stocking classes within the various age groups is fairly consistent except for the 10-year class. In this class poor stocking assumes greater proportions. This condition is partly the result of the large scale logging practiced in this region and partly due to the hazards to which the youngest age class is naturally exposed. The clear cutting practiced in this region the last few decades has resulted in large areas with too few seed trees and decreasing chances for reseeding as logging proceeds to the neighboring lands. These areas are constantly exposed to recurring fires. Seedling mortality is high due to drought and climatic conditions, and all these factors have combined to reduce the stocking.

RADIO

By Fred Funke, R. 5

Two forests, the Sierra and Santa Barbara, have been added to the list of units equipped with radio for fire control work, raising our total to five forests with an aggregate of approximately 70 sets for the region. So much general interest has developed and so many questions are being asked that we will undertake to answer a few of them for the benefit of the forests which have not had contact with the outfits.

We are using four different types of outfits: the "M" transmitter, which is a large outfit for headquarters use, having an output of 25 watts, and giving a normal consistent range for voice of about 80 miles. As a companion is used a standby receiver either of the midget broadcast type, with coils cut down to cover our frequency assignment, or a very sensitive superhet receiver, where local interference is too severe for the midget outfit. The superhet is equipped with a small synchrophase motor identical to the small motor used in an electric clock. To the rotor shaft is attached a small tuning condenser so that once the receiver is set on frequency, the switch can be thrown on for the synchrophase unit and it will tune back and forth across the frequency set on the dial, permitting the use of the outfit as a standby receiver. Any station coming on the air will be picked up by the receiver due to the fact that the tuning unit will cover a range of about 10 kc either side of the frequency to which the dial is set.

The cost of the transmitter is $200. the midget standby receiver $20, and the superhet, $140. The SP set is a new edition of the old SP job and now has an output of nearly 5 watts. It is intended for permanent installation, or for use where it can be carried by auto, as the heavy duty batteries required are a bit too heavy for general packing work. Just what range this outfit will have under R-5 conditions remains to be learned, but it should give a normal voice range of about 30 miles. The cost complete is $90.

The PF set replaces the SP set of last year as a portable unit. It weighs 57 lbs. complete with the kit box which contains the heavy duty batteries for stationary installation as well as the portable field batteries and set. For field use the outfit with light weight batteries weighs 16 lbs.

These batteries will give a normal life of 6 hours in operation. The H.D. batteries will operate the set 45 to 50 hours. The cost of the set is $60 for the field unit and an additional $70 for the kit box, H.D. batteries and accessory gear, which make the outfit a dual purpose job.

A new type outfit which we will try this season is the "V" type, an ultra high frequency job tuned to 9½ meters (about 31 megacycles). These outfits operate on a frequency above the static level, and are practically free from all atmospherics, are not subject to fading and enjoy one feature which our other outfits lack, and that is to get through consistently. You either get through fine or not at all, and, once a contact is made from a given point, you can be assured of getting through equally well the next time you try it. Power does not seem to mean much at this frequency. They are flea power outfits operating on a small dry cell, which is a little larger than the hand and about 1" thick. The range is good for about 30 miles. The antenna is 14 feet 2 inches long, half of it on each side of the set. H. D. batteries will run the outfit about 800 hours, the light battery about 10 hours. The outfits are made up as a single for packing in a knapsack by fire scouts, etc. and a duplex set which is merely a double circuit, one the transmitter and one the receiver. The single weighs about 8 lbs. and costs $35, the duplex weighs about 22 lbs. and costs $55.

The only serious handicap in operating at these frequencies is that 31 megacycles is close to optical frequencies, and, for this reason, the sets must be setup as nearly intervisible as possible. A slight bending of the line of transmission does not appear to affect it very much, but for consistently good transmission air line shots are preferable. We have turned the beam over a hill and into a canyon causing a drop of 1200 feet in a distance of 6 miles with fair results at the receiving end. This appears to be about the limit. From the same location we contacted with good signal strength an intervisible shot of 28 miles. These UHF outfits will prove valuable for ship to ground contacts and for use by scouts and other key men on fires. They can be set up in just a few minutes and contact made with camp, thereby saving hours of tedious travel and, more important, getting word to camp just before crews are sent out. Close contact with line operations should result from use of the outfits.

We are trying out a number of auto radios for patrol cars on each of the forests equipped with radio. The sets being used are a standard make in which we have cut down the coils so that they do not cover any but our frequencies. No transmitter is included with these outfits, the use of the sets being confined to control of moving patrolmen, recalling suppression trucks out on false alarms, etc. Some trouble has been experienced in developing a satisfactory antenna for the car radios. A compromise was finally made by using a rubber encased screen for mounting above the roof of the car. This appears to give the best pickup, either for antenna type or location.

Now for a word on how the sets get out. We pick up regularly Mace and Munhall on the High Sierra Districts of the Sierra. Prior to this season, both of these men have been out of communication a great part of the fire season. SP sets and PF sets on the Sierra seem to be able to drop a signal into Oakland equally as well as the M set at Northfork. The Santa Barbara copies and gets interference from an SP set at Mt. Shasta as well as copying the M set at Yreka, the latter about 600 miles airline. Considering the fact that we have a range of power in use for the above distances of .7 watt for the PF set to 25 watts for M set it should be easy to see that possibilities are very good for causing interference between forests, where more than one forest is using the same frequency. The region is using frequencies 3295, 3385 and 3445; the Klamath, Trinity and Santa Barbara on 3385, the Shasta on 3295 and the Sierra on 3445.

The Interdepartment Radio Advisory Committee has ruled that radio can be used for "Forest Protection" purposes only and is not intended to be used where regular communication systems are available or can be built to serve the purpose. The exceptions are: where it would be too expensive to build telephone lines, or where it becomes necessary to tie in temporary camps - both of which are classed as emergency conditions. For the present at least, radio as an administrative communication system is out of the picture. Future development will undoubtedly make the ultra high frequencies available for long range and consistent transmission. When that time arrives we will probably enter a new era in voice transmission.

The following developments are under way which should provide considerable improvement in the sets next year: Better types of UHF sets for use in the 9½ meter band, as well as the development of an automatic relay device which can be installed in all stationary sets so that when a signal is received on the antenna it will cause a bell to ring to attract the attention of the lookout or the operator, doing away with the necessity of keeping a set tuned to frequency to be able to receive a signal coming over the wire. There is also some development in getting better spread of the signal at close range. One trouble we have had is the skip distance effect during certain periods. It appears that this will be overcome during the next year so that we can spread a signal with reasonable strength over a given radius with a fair degree of consistency.

Practically all radio tube manufacturers have a flock of new tubes in the pot which they are prohibited from releasing, or giving information on, by the present codes until after Jan. 1 of next year. We can expect some radical changes in radio design as soon as these new types are made available. We now have tubes combining the features of two tubes in one envelope, and the characteristics of the tube are such that we can utilize it to do the work formerly requiring three tubes. We can expect new tubes to be much smaller in size and of complicated circuit structure combining the features of multiple tube circuits. In fact, at the present rate of progress in tube design, it should not be many years before we will have one tube radio sets which will be much more efficient in every respect than our present day 10 tube supers. - From R-5 Bulletin.

FIRE RECORDS

Total Acreage Burned in 1934

[Deviations from average on dates shown are indicated in acres either over (+) or under (-)]

	Compared with average for 1931-33				Compared with 1931 only
Region	To July 20	To July 31	To August 10	To August 20	To August 20
1	- 6763	- 16922	- 17702	+ 71100	+ 16000
2	+ 2429	+ 608	+ 167	- 155	- 11750
3	+ 20835	+ 21390	+ 22135	+ 22068	+ 23097
4	+ 9353	+ 4559	+ 6297	+ 25358	- 18591
5	+ 3712	+ 12566	+ 9508	+ 9888	- 33056
6	- 5340	- 2906	+ 3990	+ 1320	- 32210
10	+ 354	+ 353	+ 353	+ 335	+ 384
Total	+ 24580	+ 19648	+ 24748	+ 129914	- 56126
7-8	- 6698	- 4868	- 4662	- 4623	- 8243
9	+ 7041	+ 9079	+ 11994	+ 11423	- 8205
G. Total	+ 24923	+ 23859	+ 32080	+ 136714	- 72574

As will be noted, during the ten day period ending August 20 the outstanding thing is that Region 1 jumped from a position of 17,000 acres below the average as of August 10 to

71,000 above the average area burned on August 20. Most of the lost area is in non-reproducing old burns on the Selway Forest. Accumulated debris of earlier fires is reported to have made fire fighting very difficult and frequent winds caused the loss on considerable length of line when sparks and brands jumped ahead from a half mile to several miles.

As of August 20, the National Forests as a whole had lost 136,000 more acres than the average to that date for the previous three years. All Regions except 2, 7, and 8 have lost more than the average area burned to August 20. Region 2 held its burned area below the average until July 20, then exceeded the average until the period ending August 20, when it again pulled the burned area down below the average. Of the entire family of Regions, only 7 and 8 have enjoyed normal weather and drought conditions. The loss of area in these Regions to August 20 was 4,600 acres below the average for the three previous years, despite the disadvantages or having large additional areas of land to protect and numbers of additional people to contend with who have not been indoctrinated with the precepts of forest protection.

The 1934 record to August 20 looks better when compared with 1931 only. On August 20, 1931, 72,000 more acres had been burned than in 1934.

Some members of the Service are prone to talk about the too common occurrence of timidity and ineptitude in clean burning of fire lines; but Region 5 supplied a new topic of conversation when forest officers recently stopped an outside fire, which was threatening the Sierra, by backfiring 15 miles of the Ponderosa Way now being constructed by CCC workers of this Forest.

NO JOKE EVEN IN 1867

In 1867 "The Dalles (Oregon) Mountaineer", in an editorial, protested against the wanton waste of timber in the Coast Range saying: "It may be considered a good joke to start a roaring fire in the mountains; come down into the plains and look back at it and as the mighty cloud of smoke curls upward, say 'We did it! or 'That is our fire!' but no thinking man will be guilty of crediting any such suicidal pleasures, particularly such a one as will destroy, in a few hours, miles of timber which required a lapse of a century to grow.... it would only be justice to future generations, for the government to establish posts of Wood Rangers......to control the American appetite for rousing fires......".

A NEW DEAL IN GERMAN FORESTRY

By W. N. Sparhawk, Washington

Along with other, better advertised changes under the Nazi regime, the German forestry system is in process of revolution. Some months ago the new head of the Prussian Forest Service issued orders that the prevailing system of clear cutting in the State Forests should be given up and selective cutting substituted wherever practicable. In order to obtain a basis for regulating the cut under the new system, Prussia for the first time is making a survey of the stand of timber in her State forests. Instructions call for calipering every tree over 4 inches DBH in stands over 80 years old and in uneven-aged stands, and 5 percent and 10 percent of such trees in 41-60 and 61-80 year stands, respectively. Now it is announced that clear cutting must give way to selective cutting in the State forests of all the other German States.

By law of July 3 of this year, control of all of the State forests was taken away from the individual States and turned over to a newly established Reichs forestry department.

This is set up as an independent ministry under a Reichsforstmeister - Hermann Goering, the head of the Prussian government. For the time being, title to the forests is to remain in the respective States, but the national government has complete control over their management and personnel. At the same time, such control over communal and private forests as has been exercised by the several States is also put under control of the central government, and a general nationwide law for public control over private forests is in process of formulation.

In announcing his policies to a recent convention of State forest officials, Herr Goering set up as objectives the maintenance and extension of forests (1) as a source of inspiration and symbol of German civilization (together with game and wild life, which is also put under national control); (2) for the sake of their effect on climate, protection from wind, regulation of water supplies and run-off, and maintenance of the soil; (3) for their social benefits, particularly as a source of employment (he hopes to build up a permanently settled corps of forest workers); and (4) to supply the national requirements for timber and other forest products and thus avoid importation.

YE EDITOR DISCOVERS

For sometime it has been felt that there is a need for rather simple instruments which would enable those in charge of fire control to measure more adequately the forest fire danger. In Oregon this need was increased by the passage of a law which makes the maintenance of such instruments compulsory upon the woods industry. The law also provides that the instruments so purchased should not exceed $25 in cost. To meet this need, the Pacific Northwest Forest Experiment Station, under R. E. McArdle and with the help of CWA and other emergency funds, has developed a series of instruments which can be manufactured for less than the $25 specified by the Oregon law. A set of these instruments was recently received in the Washington Office and has been reviewed with a great deal of interest by various members of the office. It includes a fan psychrometer, a set of thermometers, a fuel inflammability indicator with scales and hazard indicator sticks, a rain gauge, a wind velocity gauge, and wind vane.

When sent out, these instruments are accompanied with a blue print of an instrument shelter, relative humidity tables, and record forms and instructions. Some 150 of the instruments have been made up and furnished the field organization of the Forest Service and the States in the Northwest. They are not for the purpose of obtaining data on the weather as a Weather Bureau station might be, but are primarily to collect data on fire danger. An effort is being made to obtain patents on them.

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The timber cut on National Forests during the F. Y. 1934 was about 675,000,000 board feet, of which about 600,000,000 feet were cut in sales and 75,000,000 feet were given in exchange for land. The cut in sales was an increase of 54 percent. The resumption of operations by holders of old contracts gave this cut an average value of $2.33, an increase of 8 percent compared with 1933. New sales, small in amount anyway, probably contributed little if anything to this increase in unit value. This resumption of operations was also reflected in the excess of more than $100,000 in timber sales receipts over value of timber cut, thus rebuilding the amount of advance deposits on hand on account of sales after a three-year period of liquidation of those deposits. The combined effect of increased cut, increased unit value, and an increase rather than a decrease in advance deposits, was to make the timber sale receipts nearly double those of the previous year. The exact cash receipts figures are $1,499,216.48 in the F. Y. 1934 and $756,747.73 in 1933, thus giving a 98 percent increase.

All Regions except R-3 joined in rolling up these increases, with the North Pacific Region and the Eastern Region (present R-7 and R-8) showing especially noteworthy gains in receipts. In Region 3, the decrease was due to the completion of a large sale by a company which shifted its logging operations to an Indian Reservation.

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During the week ending August 27 the number of men employed from Nira funds fell from 16,000 to 13,000. A still greater drop may be expected in the report for the week ending September 3. The Board of Public Works is again asking searching questions about projects on which work has not been started. Despite interruptions for fire fighting and the legitimate hold-backs of Nira funds for fall and spring planting, etc., it is expected that the Board will be well satisfied with the speed with which the Forest Service has prosecuted its Nira work. The purposes of the Public Works Administration are not fully served, of course, when the work is done and financial obligations incurred. Bills must be rounded up, vouchers submitted, and funds put into actual circulation before the cycle in the use of public works funds for recovery is completed. Records of money actually disbursed by the Forest Service from these Nira allotments on July 31 left something to be desired, but it is expected that the succeeding records on August 31 and September 30 will give ample ground for the claim that the Forest Service fears no competitor when it comes to executing a difficult job with unprecedented speed.

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Fresh estimates of work to be done on the National Forests under emergency appropriations and for unemployment relief and social rehabilitation have been received and are being compiled. Mr. Ickes has recently given out an interview which indicated the possibility of a future policy on the part of the Administration of preference for Federal project as against non-Federal projects, and also preference for work relief as against maintenance of the destitute by direct doles. These lines of thought suggest that the entire work job may no sooner be finished than the Forest Service will be asked to undertake a new and possibly larger program of public works on the National Forests as a means of relief, particularly for that portion of the unemployed and destitute which is peculiarly dependent upon the National Forests.

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The Washington Office is taking on somewhat the same appearance that it did during the rush of the Copeland Report. Preparation of the land use report is continuing to call in field men for details, and the Atlantic Building is about as busy in mid-summer as it often is during the winter months. At the present time field men in on detail to help on the study include R. B. Forbes, Director of the Allegheny Forest Experiment Station, C. E. Behre, Director of the Northeastern Forest Experiment Station, T. J. Mosley of the Forest Products Laboratory, and Frank A. Ineson of Region 9.

THE LIBRARY'S CONTRIBUTION TO A GREAT PROJECT

By Helen Moore, Washington.

The Shelter Belt Project--part of the "New Deal" -- and another opportunity for the Forest Service to show what it can do. Of course everyone is talking about it, cussing and discussing it, asking for more information about it--all of which is pretty hard on a personnel rushed to death with forest fires and summer duties. That's where the Forest Service Library, Washington, D. C., comes in--we have a new bibliography SHELTERBELTS FOR

THE PRAIRIES; which consists of a select list of references on the subject, each of which has been individually checked and evaluated by two forestry graduates and their notations on the scope and treatment of the reference included along with the citation. It's the first annotated bibliography we have attempted--let's hear what you think of it.

And in case anyone asks you why the plains are treeless, well, just give us time. We're still looking into that and will let you know the results of our efforts shortly.

And then there's always the matter of taking care of what we have--FOREST PRUNING: A BIBLIOGRAPHY, dated June 1934, is also ready for distribution.

WHAT TWENTY YEARS HAS DONE

During a recent housecleaning of maps, etc., in EM, and disposition of materials of value or no value, we ran across a graph and table prepared for the Fiscal Year 1914, which gives some interesting statistics for this day and age, for our Region. It shows that at that time we had 34 National Forests, 34 Forest Supervisors, 14 Deputy Forest Supervisors, 27 Clerks, of which the Manti was the only Forest with 2, 22 Forest Assistants, and 201 year-long Forest Rangers.

Our Region now has 23 National Forests, 23 Forest Supervisors, 10 Assistant Supervisors, 35 Clerks (13 Forests have two each), 3 Junior Range Examiners, 7 Junior Foresters, and 125 year-long Rangers. (Only the regular personnel for the National Forests taken into consideration).

The above records show that we are either becoming very efficient or have contributed to some extent to the unemployment situation in this country. At any rate, better management and efficiency seems very evident, since in 1914, for example, the Humboldt Forest with approximately 750,000 acres had a Supervisor, a Clerk and 8 Forest Rangers, whereas now, with the inclusion of the old Ruby and Santa Rosa Forests, and an acreage of 1,481,000 acres, the Forest is administered by a Supervisor, a Clerk, five Forest Rangers and an Assistant Supervisor.--From R-4 Bulletin.

EVERITT LOSES LIFE IN FOREST FIRE

John S. Everitt, Supervisor of the Shasta National Forest in California, was burned to death in a forest fire on the slopes of Mt. Shasta Saturday night, August 25. The fire, caused by lightning, trapped the Supervisor in burning brush.

Everitt was born in Pennsylvania in 1894. He served 22 months during the World War as Ensign in the Navy. After graduating from the Cornell Forest School, he did logging and mill work in the Adirondacks, and joined the Forest Service as forest assistant in 1920. His first assignment was to the Shasta National Forest, where 14 years later he met his death.

Everitt saw service successively in the Shasta, the Plumas, the Stanislaus, the Lassen and the San Bernardino National Forests. He was called to the Regional office upon the death of Walter E. Jotter in 1931, becoming assistant to Regional Fire Control Chief J. H. Price. He received his last promotion and assignment to supervisorship of the Shasta National Forest in March, 1934, and took charge April 15. His wife survives him.

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>
> Theodore Roosevelt

Vol. XVIII No. 20 Washington, D. C. September 24, 1934

THE IMPORTANCE OF RECREATION AS A LAND USE IN NEW ENGLAND

(Extracts from an article by Lawrence W. Chidester in the
Journal of Land & Public Utility Economics for May 1934)

Hundreds of acres of land formerly used for agriculture and timber are now used solely for recreation. ***

With the decline of agriculture and industry in some of the rural areas of New England and the consequent migration of labor and capital, many towns now rely almost entirely upon the summer visitor for their livelihood; others rely upon him to a lesser but yet substantial degree. From small beginnings in 1729, when West Indian and South Carolinian planters first visited Newport, Rhode Island, during the summer season, the vacation industry in New England has grown until it now produces an income second only to the textile industry.

No studies have been made of the acreage now used for recreational purposes in New England as a whole. Consequently, the importance of such land use must be shown by the number of public places catering to summer visitors, by property valuation and income data, and by histories of individual communities.

An analysis was made in 1932 of the distribution of resort centers in northern New England - Maine, New Hampshire, Vermont. (Verna B. Flanders, "The Recreational Industry of Northern New England," a master's thesis presented at the University of Chicago, 1932).

The investigator's interpretation of the data follows:

"Resort centers are significantly close to important scenic features - the ocean, lakes, and mountains. Starting with the coast an almost unbroken line of resorts extends from Hampton Beach in New Hampshire to Casco Bay in Maine. Concentration here indicates many advertisers in each community. In the case of Hampton Beach the number of establishments runs up to over forty; in Old Orchard, Maine, to nearly one hundred fifty. Eastward, past Mount Desert Island, there is a thinning out of resorts all along to Eastport. This southwest-northeast trending line is paralleled forty or fifty miles inland by a belt of lake resorts. Here an almost continuous southwest-northeast line appears with Lake Sunapee, Lake Winnipesaukee, Sebago-Long Lakes, and the Belgrade Lakes prominent. Another group defines the White Mountains area, both the eastern and western sides with blank wilderness between. A fourth district of more widely spaced resorts marks the Rangeley and Moosehead Lakes in Maine with straggling lines beyond them to the northeast, deep into the Maine woods. In Vermont the southwest-northeast trend of the Green Mountains is faintly suggested by several widely separated resorts, and lakes scattered over the State account for the presence of other recreational centers. There is not in this State, however, so marked a clustering of resorts in the vicinity of an outstanding relief feature as in Maine and New Hampshire." ***

The number of all types of public places in Maine has been determined by the Maine Development Commission. These data are presented in Table I. The figures are given not only because they supply detailed information about a specific area of New England but also because they show the relative importance of the different types of places.

Table I. Number of Public Places in Maine Offering Facilities for Vacationists, 1930

Summer hotels and tourist homes	1,588
Summer restaurants	1,210
Overnight camps	595
Sporting camps	284
Boys' and girls' camps	183
	3,860

A second measure of the importance of recreation as a land use is the value of property devoted to this purpose. *** Table II brings together for the first time the results of the surveys made by the six States in New England. * * *

Table II. Assessed Valuation of Recreational Property in New England, by Classes and by States, 1930

State	Resident Residential Property	Non-Resident Residential Property	Public Recreational Property	Total
Massachusetts	$115,218,711	$ 38,209,726	$ 35,930,743	$189,359,180
New Hampshire	25,123,586	42,581,429	30,238,999	97,944,014
Rhode Island	---------	62,320,041	---------	62,320,041
Maine	8,412,370	35,144,720	10,558,276	54,115,366
Connecticut	23,391,010	23,190,488	5,027,971	51,609,469
Vermont	---------	20,713,000	5,389,085	26,102,085
Total	$172,145,677	$222,159,404	$ 87,145,074	$481,450,155

The third measure of the importance of recreation is the annual income derived from vacationists. The widely accepted sum for New England's receipts for this source is $500,000,000 (in a normal pre-depression year). This figure was derived by taking as a base the American Automobile Association's estimate that 3,000,000 auto tourists visit New England yearly. This base sum was then multiplied by $100, the per-person expenditure determined by the State of Maine Publicity Bureau from questionnaires, and certain adjustments were made for railroad, steamship, and bus tourists. Such a method of calculation is open to serious criticism, especially in view of the United States Department of Commerce's analysis of tourist expenditures. (For a criticism of this method see L. W. Chidester, "How Precise is the Income Figures of the Tourist Industry?" Sun-Up Magazine, February 1930. For the Department of Commerce's analysis see the yearly issues of "The Balance of International Payments of the United States;" the 1930 issue is Trade Information Bulletin No. 761.) The chief difficulty is with the $100-per-person figure, since many other tourist bureaus and the Department of Commerce use sums much smaller than this and only a few use larger amounts.

In December, 1932, the Development Commission of the State of Maine completed a comprehensive survey of the recreational business in that State. This study indicates that vacationists spent $85,684,741 in Maine in 1930. The New Hampshire Foundation, a research bureau cooperating with its State Development Commission, has determined upon $75,000,000 as New Hampshire's income from tourists. With each of these States reporting less than $100,000,000 it seems improbable that the New England figure could approach $500,000,000. Maine is conceded to rank either first or second as a tourist State in New England. Further, the vacation business in three of the six States, Vermont, Rhode Island and Connecticut, is very small relative to that in Massachusetts, Maine, and New Hampshire. To attain the $500,000,000 sum the tourist business in each of the six States would have to equal that in Maine, and no one will deny that this is far from the facts of the case. It is the writer's opinion, based upon the Maine and New Hampshire surveys and upon certain measures of the relative importance of the vacationist in the six States, that a liberal estimate of New England's income would be $400,000,000.

This large sum is important not only because of its size but because of its wide diffusion into all parts of a community. The American Automobile Association's analysis of tourist expenditures into transportation (20 percent), accommodations (20 percent), retail stores (25 percent), food (21 percent), amusements (8 percent), and confections (6 percent), has been widely quoted, but the distribution as actually found in Maine, a typical resort State, seems more significant. This distribution, given in Table III (Maine Development Commission), shows that hotels and sporting camps receive only 16 percent of the total expenditures, garages and filling stations only 9 percent, and overnight camps, rooms, and eating places only 7 percent. Thus the claim that these agents receive the lion's share of the vacation business is clearly refuted; in Maine they receive less than 1/3 of the total.

Table III. Income from the Vacationist in Maine, by Business Interests Involved, 1930

Business Interests	Amount	Percentage of Total
Summer hotels and sporting camps	$13,898,865	16.2
Miscellaneous (architects, barbers, brokers, blacksmiths, opticians, lawyers, caterers, etc)	12,000,000	14.0
Groceries	9,558,080	11.2
Garages and filling stations	7,884,513	9.2
Boys' and girls' camps	4,162,518	4.9
Contractors and lumber	3,812,200	4.4
Boats and yachting	3,302,600	3.9
Dry goods	3,018,500	3.5
Tea rooms and eating places	2,932,805	3.4
Transportation	2,500,000	2.9
Taxes on recreational property	2,035,440	2.4
Drugs and confectionery	1,802,500	2.1
Gifts and antiques	1,797,536	2.0
Wages (caretakers, domestic help, help employed direct)	1,462,430	1.7
Hardware	1,397,100	1.6
Rent of cottages	1,342,900	1.5
Shoes and clothing	1,220,868	1.4
Furniture	1,122,718	1.3
Farm produce	1,100,800	1.3
Overnight camps	1,019,450	1.2
Plumbers	$1,016,245	1.2
Amusements	929,121	1.1
Fish	700,000	.8
Electrical contractors & merchandise	675,120	.8
Rooms for tourists	585,700	.7
Sporting goods	542,700	.6
Painters and paperhangers	434,000	.5
Laundry and cleaners	392,700	.4
Guides (wages)	391,250	.4
Doctors & dentists	341,000	.4
Electric service	325,000	.4
Telephone and telegraph	300,000	.4
Ice and fuel	300,000	.4
Masons	300,000	.4
Florists and nurseries	298,638	.4
Bakery	200,000	.2
Water service	155,444	.2
Insurance	140,000	.2
Non-resident hunting & fishing licenses	136,000	.2
Photos	90,000	.1
Livery & saddle horses	60,000	.1
Total	$85,684,741	100.0

The history of typical towns affords a fourth indication of the importance of recreation as a land use. Bristol, New Hampshire, the first town to be considered, is located but two miles from Newfound Lake, and its township lines touch the shores of the lake. (Arthur I. O'Brien, "The Development of the Recreational Industry in Bristol, New Hampshire," a master's thesis presented at Dartmouth College in 1932.) Thus opportunities in Bristol for the development of recreation as a land use have been excellent.

Between 1900 and 1932 manufacturing and agriculture declined in Bristol. Of the 13 concerns, large and small, which were in operation in 1900 only one important business survived to 1930 and two were added. Employment declined from 304 workers in 1908 to 150 in 1926. The town not only lost 50 percent of its industrial population but it did so in a time of general prosperity. As to agriculture, by 1900 Bristol had turned from sheep and cattle raising to fruit culture and dairying. From 1912 to 1932 the number of dairy cattle declined 42 percent to a total of only 169, and apple raising suffered a similar fate. The townspeople are aware of the unimportance of agriculture and recognize that the industry has been declining for years.

Despite this decline of manufacturing and agriculture in Bristol, population has increased and the standard of living has risen. There was a loss in population to 1920 but during the next decade the town regained the position it held in 1900. As to standard of living factors, telephones in use during the last decade increased 45 percent faster than for the State as a whole; automobiles increased 300 percent; and student enrollment increased 250 percent in the 10-year period.

The reason for this increase in local prosperity in the face of a decline in basic industries seems clear to the investigator:

"The recreational industry has more than filled the gap left by other forms of economic activity. This business existed in Bristol even before 1910 but it has been only since 1920 that it has begun to assume real proportions *** No other single factor or set of factors can account for these developments." ***

A second detailed study has been made of the town of Sandwich, New Hampshire. (Henry R. Francis, "The Recreational Industry in Sandwich, New Hampshire," a master's thesis presented at the University of New Hampshire in 1932) This survey produced data and conclusions very similar to those for Bristol. Consequently, only those phases not covered in the Bristol report will be considered.

After examining the history of Sandwich, a town located 12 miles north of the northern end of Lake Winnipesaukee in a mountainous country with several lakes, the investigator drew the conclusion that "the shift in land utilization, from a settlement based upon a declining agriculture and a forestry spasmodic in practice to one which is predominantly vacational as to human occupancy, is the principal cause of the maintenance of high assessed valuations of property when compared with a continuously dwindling population."

(We hope these extracts will be helpful and/or thought-provoking to those who may have to discuss recreation at the coming Grazing Conference. -H. R. K.)

"OLD FIELDS"

By E. N. Munns, Washington

Sometime ago a discussion arose as to the origin of the expression "old fields" as applied to abandoned farm lands of the Coastal Plain and Appalachian region. At that time no plausible explanation could be advanced save that the term "field" is applied generally to farm land in the eastern United States.

The use of the name "old fields" was first applied to Indian cultivation. Thus in early letters and documents one comes across references to disputes with Indians as to the ownership of "old fields." In the 1671 journal of Batts and Fallam, perhaps the first Englishmen to reach the Ohio River watershed, we find "due west, the soil, the farther we went is the richer and fuller of bare meadows and old fields." Later on this same trip, these men encountered "more old fields . . . . rich ground where on the Moketans had formerly lived, and grown up with weeds and small prickly Locusts and Thistles to a very great height."

Rev. John Clayton, Rector at Jamestown, in a note on this old diary wrote in 1683: "Old fields is a common expression for land that has been cultivated by the Indians and left fallow, which are generally overrun with what they call broom grass."

Other expressions found include, "Indian openings;" "sassafras fields;" "Indian fields overgrown with prickles;" "old Indian fields now grassy;" "Indian charings".

Tobacco plantings in the early part of the 17th century came to be known as "tobacco fields." In some of the early colonial letters and papers are references to the fact that various individuals had so many "acres in fields of tobacco." As the early agriculture soon exhausted the fertility of the coastal plain soils through erosion and by raising tobacco, a crop that makes heavy demands upon the soil, new lands were taken up and the formerly used land became an "old field" and was used as pasture. The term "plantation" as applied to tobacco apparently did not come into use until the end of the century.

From the above it is easy to see how "old fields" came to be applied first to the abandoned Indian farm lands and then to the abandoned tobacco land and so came into general use. And as loblolly then as now quickly seeded up this abandoned land it is easy to see how it came to be known as "old field pine."

"MORE ABOUT UNIFORMS"

By Dana F. Kirkmire, Washakie

After having read so many articles in recent issues of the Service Bulletin concerning uniforms, I am going to run the risk of being censored for "carrying coals to Newcastle", by adding some remarks of my own.

This Spring I bought from Fecheimer Brothers a rather complete, new, official uniform, consisting of hat, 2 poplin shirts, tie, and breeches; and from another firm a pair of field boots. In addition, I purchased a Cossack style jacket, with zipper fastener, of the same material as the breeches. This latter item, while not official, seems to me to have it all over our regulation Norfolk style coat, both in looks and practicability. It is lighter than the coat and permits of greater freedom of movement of the arms and body. In fact, the jacket possesses so many advantages over the regulation coat that jackets of suede or other materials are worn by a good many Forest Officers in preference to the coat. This jacket forms a harmonious complement to the rest of the uniform, and I should like to see this type jacket replace the Norfolk coat as part of the regulation uniform; or failing that, at least be included as an optional feature.

The uniform as listed above, cost me slightly more than $55. Now I would have no objection whatever to wearing this expensive layout, (which I have been told becomes me), constantly when on duty if my job consisted solely of inspection or supervision work. However, and in my opinion a good many writers on the subject have failed to take cognizance of this fact, a ranger's work is not primarily of the above kind.

My experience has been, and I believe it is the same with many other District Rangers, that a considerable amount of physical labor must be performed - from cleaning out the barn, cutting windfall out of trails, repairing barb wire fence or telephone lines and painting signs or fire tool caches to fire suppression work. On none of the above jobs do I feel that it is practical to wear what is, to me at least, my expensive uniform. First of all, the uniform has to be kept clean and pressed to look well; and there are too many chances of tearing it or spilling paint on it for me to sanction its use on the above jobs. Then, too, I am located nearly a hundred miles from the nearest dry cleaning establishment, to which the uniform would most certainly need to be sent long before the usual pack trip is over if it is to keep its proper appearance. I think it would be just as impractical for me to wear my $55 outfit on my average pack trip, as it would be for some of my neighbor ranchers to wear a $50 or $60 dress suit, with white collar, etc., when harvesting hay, branding calves, or fixing fence.

In a recent Service Bulletin, one correspondent suggested the adoption of "shorts" for the trouser part of a field uniform; and at other times "knickers" or "plus-fours" have been suggested. "Shades of Beau Brummell!", what would my saddle horse think and do, if I were to try to climb into the saddle with such an outfit; and how would my poor legs look, encased to the knee only in "shorts", after a day's ride in hail or snow through brush or heavy timber, and after repairing some barb wire fence en route?

Around here nearly everyone wears waist overalls or "Levis" when he is doing work such as I have mentioned. Either a cheap woolen or cotton shirt is worn, and when on horseback, cowboy boots and "chaps". I, too, wear such an outfit when I am on pack trips, and find that my official badge is sufficient evidence to distinguish me from those thus dressed, generally amounting to at least 99 people out of 100.

To sum up, I think that a regulation uniform is the proper thing to wear if one is attending a stockmen's meeting, addressing a Rotary Club, or is engaged solely on inspection or supervision work, etc.; but I think it is most impractical to wear a uniform when one has to do considerable manual labor, on a pack trip, or on a fire. In my opinion, a soiled, unkempt uniform looks worse than no uniform at all; and the matter of when or when not to wear it should be left to the judgment of the individual.

CONTROL OF RABBIT INJURY

Rabbits have caused a vast amount of damage to young conifer plantations throughout the Lake States. In many cases the number of trees severely injured or killed has been so high as to result in making the plantations as a whole failures. During the last few years, the rabbit population has been at or near one of its periodic peaks and this is undoubtedly a factor in the recent heavy losses in conifer plantations. The elimination of this damage is not a simple problem, since certain aspects of game management must be considered as well as the production of forests. Three methods can be used for reducing the damage.

The first is to limit planting to more open areas during the time when the cycle of rabbit population is at one of its periodic high points, as it is at present. It has been clearly demonstrated that rabbit damage is much greater in brushy areas than in more open sections and therefore the planting of lands densely covered with brush should be postponed until the decimation of the rabbit population occurs. Plantations made on such areas should then be released from brush before the rabbit population has again begun its upward trend. This protection should be given to the young trees until they have reached a height of at least three feet.

The second possibility is to reduce damage by controlling the number of rabbits, especially during the periods of high population. Several methods of control have been successfully worked out but no one of them alone is effective. The following are considered useful: snaring, poisoning, hunting, and live trapping. Attempts to make concerted drives on snowshoe hares have met with failure.

A third measure which gives promise of being helpful is to treat the seedlings before planting with sulphurized oil. This acts as a strong repellent to rabbits and has a possible added value in lessening the transpiration of the seedlings and thereby increasing their drought resistance during their first year in the field. – Technical Note, Lake States For. Expt. Sta.

GOOD RESULTS FROM CCC PLANTING

By J. F. Kummel, R. 6

Last fall four separate planting projects were conducted by the CCC on the Columbia Forest. The work was undertaken with not a little anxiety as to its successful outcome, for the reasons, first, that fall planting had not given particularly satisfactory survival in previous trials, and second, the fear that the CCC boys might not "come through" with the desired grade of workmanship, or else that shifting of camp locations might interrupt the work. Then just as the jobs got under way, a three-weeks period of dry weather with many days of low humidity, high temperatures and strong winds set in, which did not add to our peace of mind. Some interruptions to the work did materialize, but the quality of the planting was for the most part all that could be desired. Where fault was found it was largely because of poor supervision.

Three of these plantations were examined this spring in order to be able to separate early losses which might be due to poor planting, to the period of dry weather at time of planting, or to winter killing, from those which may be expected to occur during the summer dry period. Present survival was found to be as follows:

Project and species	Survival percent
Summit Creek – Douglas fir	94.4
French Butte –	
Douglas fir	97.6
Noble fir	97.9
Hamilton Buttes –	
Douglas fir	90.3
Noble fir	97.2

It is apparent from the satisfactory survival thus far that the CCC boys did a good job, and that whatever subsequent losses may take place can not be attributed to the manner of planting. – From Planting Quarterly

ALGERIA PRINCIPAL PRODUCER OF BRIAR ROOT FOR PIPES

The production of briar root for smoking pipes dates back to 1860 when a French firm found it to be of excellent quality for the manufacture of smoking pipes, states a report from Vice Consul Joseph I. Touchette, at Algiers, made public by the Forest Product Division of the Department of Commerce.

Soon after this discovery the use of briar for pipes increased rapidly and sources of supply were investigated. Briar wood suitable for smoking pipes is found in commercial quantities in parts of Spain, France, Italy, Corsica, Sardinia, Sicily, Greece, Asia Minor, and the Northern coast of Africa.

From that time, the Algerian briar industry grew in importance until in recent years production has been about 44 million pounds. During the period 1919 to 1928 competent authorities estimate that Algeria supplied about two-thirds of the world demand for briar root for pipes. While Algerian statistics do not segregate exports of briar root, available figures indicate that the trade declined over 70 percent by value during 1933 as compared with 1927. This decreasing trend has been apparent since 1927, with the exception of 1930 when exports showed a gain over the previous year.

As the Algerian trade in briar root increased, the Government granted concessions for cutting, with state and communal forests being leased for 5 year periods. In addition, considerable root is produced from private forests. When production assumed commercial importance, circular saws were introduced into Algeria so that blocks could be cut for exports, thereby saving considerable freight on waste material. It is estimated that 70 percent or more of a briar stump is wasted when converted into blocks of suitable size and quality for pipes.

The preparation of the briar root for export is interesting. One feature is that the Government prohibits cutting during summer months, due to climatic conditions, which cause considerable checking of the roots. Cutting begins with the first rain in November. Even then, the roots are kept moistened and upon reaching the saw mill are stored in trenches covered with forest ferns and sprinkled with water. Following sawing, the blocks are boiled in water for 12 hours to extract the sap and tannin. The blocks are then dried, graded and bundled in burlap bags for shipment, each bag containing from 60 to 85 dozen blocks. - From Bureau of Foreign and Domestic Commerce News Release.

WIND AND WATER OPERATE ELECTRIC POWER PLANTS

By using an eight foot airplane propeller, mounted on ballbearings, to drive a ballbearing automobile generator, through a "V" belt with a 10 to 1 ratio, it has been found possible to generate from 200 to 1,000 watts of electric energy per day, depending upon the wind conditions at Strawberry Peak Lookout on the San Bernardino Forest. The electric energy is stored in six volt automobile batteries which assures a constant electrical supply capable of furnishing ample power to operate a battery type radio and three 21 candlepower automobile light bulbs, which in ordinary daily use consume 250 watts.

The generator output is 2 amperes with an 8 m.p.h. wind; and 18 amperes with a 30 m.p.h. wind.

The total cost of the outfit was $15, which means cheap electricity as the upkeep is practically nothing and it will last indefinitely.

Similar outfits should operate equally well on other lookout points and stations exposed to the wind. - Salm, San Bernardino. (From R-5 Bulletin)

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

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>
> Theodore Roosevelt

Vol. XVIII No.21 Washington, D.C. October 8, 1934

FOREST PRODUCTS LABORATORY FURNISHES CLUE IN LINDBERGH KIDNAPING CASE

Positive proof that the ladder used in the Lindbergh baby kidnaping was made of lumber from the yard where Bruno Hauptmann formerly had been employed was established by the Forest Products Laboratory.

The following statement was recently issued to the press by Director Winslow:

"I am highly gratified that results of significance to the Lindbergh kidnaping case have been achieved through many months of special investigations by Mr. Arthur Koehler, of the Laboratory staff.

"Early in the case Colonel H. Norman Schwarzkopf, Superintendent of the New Jersey State Police, requested the assistance of the Forest Products Laboratory in developing any possible clues from the wood in the ladder used in the kidnaping of the Lindbergh baby. The Laboratory at once assigned Mr. Koehler, its leading wood technologist, to work on the case in cooperation with the New Jersey State Police.

"Mr. Koehler's intensive technical examination of the wood in the ladder disclosed not only the species of wood but also certain very distinctive and peculiar markings of the wood. With his conclusion as to the causes of these markings as a basis, and working in close cooperation with Colonel Schwarzkopf's organization, over one thousand lumber mills from New Jersey to Alabama were canvassed and lumber samples from many of them were intensively examined by him at the Forest Products Laboratory.

"From this study, Mr. Koehler and representatives of the New Jersey State Police traced to destination and intensively examined many lumber shipments of the species and dimensions used in the ladder, until lumber with identical ,distinctive markings occurring in the ladder was found at the retail yard of the National Lumber and Millwork Company in the Bronx. This is the Company where it is now reported that Bruno Hauptmann was sporadically employed shortly before and after the kidnaping."

Due to the importance of the evidence, Mr. Winslow said he was unable to disclose further details of the investigation until a later date. He intimated, however, that other things of importance have been discovered at the Laboratory.

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FIRE RECORDS

By Roy Headley, Washington

If no material losses of area by fire are added to those reported as of September 20, 1934, the average annual loss in area for the half decade ending with 1934 will be less than the average annual loss for any other half decade since 1909. The average annual loss for the half decade ending with 1934 will be approximately .20 of one percent. The next lowest loss since 1909 was in the half decade ending with 1924, when the average annual loss was .27 of one percent. For the half decade ending 1909 the average annual loss was .19 of one percent. In that half decade we had no single year that would be called a "bad" year and did not yet know what fire control was all about. In the half decade ending with 1934 we had two seasons which would be clearly recognized as "bad" years, and if the season would close everywhere on September 20 our average annual loss for the present half decade would be within .01 of one percent of the 1905 to 1909 record.

So far, so good. If we chose to do so, we could strut with considerable arrogance over the record of accomplishments in fire control on the National Forests, but that is not all there is to the story. Losses in 1934 in Regions 1 and 4 are bad enough in themselves; but in their implications they are still worse. Never before has the spotting behavior of fires rendered human control efforts so helpless, and never before in these two Regions has nature given the fire control organizations so short an interval between start and first run.

The extreme in this connection appears in the record of the Elk Creek fire on the Boise, which devastated a total of 20,000 acres in some of our choicest commercial western yellow pine country. The accepted story is that a lumber company foreman and one man were on the fire within 10 minutes after they saw the smoke, which was probably soon after the smoke was first visible; that these men built line after line without success; that 150 men were on the fire in from one half to one hour after it started - equally without success. The fire covered 12 to 15 thousand acres the first afternoon. By eight o'clock the first night 400 men were assembled and at work in the technically correct place to initiate the corralling job. The country was easy from the standpoint of speed in construction of held line, and prospects were excellent for rounding up the fire at its then area in an absolute minimum of time. Then to add insult to previous injury, an unprecedented shift in the direction of the wind, together with an increase in its velocity, sent billows of flames back over the lines on which the crews had been distributed. Grave Arthur Potter insists that no one ever moved 400 men out of an untenable position quicker than he did. A final disconcerting touch to this story is the fact that the fire was man-caused and occurred despite the previous application of about the best and tightest prevention measures we know how to use.

The three largest fires in Region 1, which rolled up about 83 percent of the total loss of area for the Region, burned almost entirely in old burns. These fires got away and spread by spotting rather than by crossing the lines. The maximum spotting distance recorded was six miles ahead of the main fire. In some of the most disastrous instances, lines which had been back-fired and mopped up and held for two days were lost by spotting from blow-ups occurring one hundred yards to one and a half miles inside the lines in masses of snags and unconsumed fuel which had been burning for sometime.

Drought conditions in green timber in north Idaho were not so bad as in previous extreme years. In south Idaho the various indexes including drought conditions are said to label 1934 as the most severe season within the history of organized protection in that territory.

One of the freaks of the season is the fact that north Idaho suffered nothing like the concentration of lightning fires which has occurred in previous bad years. In fact, as shown in the ten-day fire report to September 20, the total number of lightning fires for the season in Region 1 is almost exactly the same as the average for the previous three years. Against this is the fact that lightning fires are above normal in all other Regions except 9, and in some areas, such as Region 3, the increase in lightning fires above normal is almost unbelievable.

REVERSION OF FOREST LAND FOR TAXES INCREASING IN THE SOUTH

By R. B. Craig, Southern For. Expt. Sta.

The reversion of land to public ownership on account of delinquent taxes, which began on a large scale in 1926 in most Southern States, still continues. During the depression years this reversion has reached phenomenal and alarming proportions. So far as present figures show, the total is still rising, in spite of increased redemption at tax-forfeited land during the past few months.

Just how much of the area now reverted to public title is forest land, the available records do not indicate. Detailed field studies recently completed by the Southern Forest Experiment Station in Arkansas show that in four counties in different parts of the State, 72 percent of the reverted area is forest land. For the State as a whole, the percentage is estimated to be 67 percent. In Florida, it is estimated that at least 65 percent of the total reverted area is forest land. In Mississippi, this percentage of reverted land in forest is estimated at 60 percent; in Louisiana, 50 percent; in east Oklahoma, about 90 percent; and in east Texas, 75 percent. About 10 percent of the small reversion in Alabama is on forest land.

Applying these percentages to the total area known or estimated to be in public title in the latter part of 1933, gives the following figures for the acreage of reverted forest land in the Gulf States:

State	Total area reverted	Forest area reverted
Florida	11,800,000	7,670,000
Alabama	80,000	8,000
Mississippi	1,250,000	750,000
Louisiana	2,708,000	1,354,000
Arkansas	1,880,000	1,260,000
Oklahoma	600,000	540,000
Texas	920,000	690,000
TOTAL	19,238,000	12,272,000

For the seven States as a whole, forest land forms 64 percent of the total reverted area. While this figure of more than 12-1/4 million acres cannot be regarded as final and indisputable, in view of the lack of absolute data to support the estimates made, it must be within 90 percent of being correct. The total represents 8.5 percent of the gross forest area of the eight Gulf States (144,251,000 acres). It also represents an increase of 2,842,000 acres over the forest area in public title on January 1, 1932, owing to the areas maturing in State or County title in 1932 and 1933.

The effect of such wholesale reversion of forest and agricultural land is patent to anyone. Not only does it render the continued existence of local government precarious, but it also increases the tax burden on the land which is not delinquent. That this is no straw-man set-up to be knocked down can be shown by a study of tax rates levied over the past five years in the counties affected by such excessive delinquency. This increase in taxes is a well-known fact to many timberland owners in the South. In many cases, state and county general tax rates have not increased materially, but road, school, bond, improvement, and similar special district tax rates have in some cases increased over 100 percent in this period. For example, in Vernon Parish in West Louisiana in 1926, the total indicated parish-wide tax rate (total taxes divided by total valuation) was 35.7 mills per dollar. Of this total, the state tax was 5.75 mills and the parish general tax 4.0 mills, leaving 25.95 mills for special taxes. In the same parish in 1931, the indicated rate was 63.4 mills, with no charge in the state and parish general taxes. Special taxes had increased from 25.95 mills to 53.65 mills, or 106.7 percent. The total tax per acre, assuming an average valuation of $3.00 for cut-over land, had increased from 10.7 cents to 19 cents per acre or 78 percent

It is not the purpose of this paper to charge either State or local officials with this condition of affairs, nor are the timberland owners who control the bulk of the lands in this parish solely responsible. Both must share that responsibility. This is merely a statement of fact given in the official reports of the Louisiana State Tax Commission. In some parts of Vernon Parish, the 1932 tax rate exceeded 200 mills per dollar. Such rates are, of course, a sure precursor of increased delinquency, as indicated by the net reversion figures for the same parish:

1925	59	acres	
1926	-		
1927	113	"	
1928	-		
1929	32	"	
1930	102,305	"	
1931	144,762	"	
Total area now reverted	247,271	"	(or 28.3 percent of the gross area of the parish)

Similar conditions obtain in many other localities in the Gulf States and constitute a major problem not only in the fiscal affairs of Government, but in the ownership and management of forest land by private interests.

To aid in solving this problem and others growing out of it, the Southern Forest Experiment Station is engaged in cooperation with the several States in a study of this "New Public Domain" arising through tax-delinquency to determine:

1. The location, extent, and status of tax reverted lands.
2. The potentialities of reverted lands for forest or other crop production.
3. The desirable line between Federal, State, and local public ownership and private ownership.

The ultimate purpose is to work out and recommend practical measures for handling and using reverted lands.

To date, field work in Arkansas has been completed, analyses of the data have been made and the final report is nearing completion. The first item listed above has been studied in Louisiana (through cooperation of the State University), in Mississippi, and to a limited extent in Georgia. Work in these States will be completed first and that in other States initiated at the earliest opportunity.

The problem of tax delinquency has reached alarming proportions in several Gulf States and unless solved by aggressive action on the part of public officials, tax-payers, and interested agencies it will threaten the economic stability not only of the lumber industry, farming, and manufacturing, but of local government itself. One factor in the growth of this phenomenon has been ,and still is, the general apathy of public officials toward a solution, an apathy engendered in large measure by the laws and practices governing procedure in tax-delinquency. Many of these laws and practices are open invitations to use delinquency as a legal means of tax-evasion or reduction, while others are merely an extreme case of a laissez-faire policy of tax administration. Neither of those conditions can continue if the tax structure of State and local government is to continue to provide revenue. Another factor causing tax-forfeiture is the past misuse and over exploitation of natural resources, soil, timber, and minerals-- a misuse born in many cases of inequitable taxation. These two factors can and must be solved before future increases in the New Public Domain can be stopped.

RADIO TO THE RESCUE

By H. C. Hiatt, Mount Hood

Radio communication, made possible by Forest Service short wave radio sets at Crater Rock and Summit Guard Station, played a major role in effecting the rescue of the body of Victor Von Norman, University of Washington student who met death on Mt. Hood, August 27.

At 6 P. M. word was received at the Zigzag Ranger Station that one of a party climbing Mount Hood had fallen in a crevasse near Crater Rock. All efforts by members of his party to get him out had failed because of the gas fumes in the bottom of the crevasse.

Paul Williams, Lone Fir Rock Lookout, and Ralph Olsen, Timberline Patrolman, were sent up the mountain immediately with an army gas mask borrowed from Ranger F. E. Williamson. At 9:15, Gary Leach, a guide from Government Camp, also was dispatched to the scene of the accident with additional gas masks obtained from the State Police and with a Forest Service Type "S" portable transmitting and receiving set.

The stand-by Type "T" radio at Summit Guard Station was turned on at the time Leach left Timberline, and at 1 A. M. the first message was received from the scene of the accident that the gas masks would not work owing to a lack of oxygen in the bottom of the crevasse. Paul Williams had made several attempts to reach the body with the aid of the masks but had been overcome by the sulphurous fumes.

Arrangements then were made for oxygen helmets to be sent out from Portland. These were brought out by three Portland firemen in the George L. Baker First Aid Car and were sent up the mountain by Forest Service pack train. These left Timberline at 7 A. M. and arrived at the scene of the accident at 10:30 A. M. Portland firemen went with the pack train to supervise the use of the oxygen tanks and helmets.

Paul Williams and Gary Leach, wearing the oxygen helmets, started down into the crevasse at 11 A. M. This attempt was successful and the body of Von Norman was brought to the top at 11.53. At this point the body was loaded on a toboggan, then on a pack horse, and carried to the end of the Timberline Road.

Radio communication between the rescue party and Summit Guard Station proved valuable during the night and early morning in keeping the rescue party posted as to when help and additional equipment could be expected. Also, Summit Guard Station received a graphic account of the rescue work as it proceeded step by step, doing away entirely with the anxious waiting for word usually connected with such work.

MORE EARLY FIRE!

By E. N. Munns, Washington.

During the Revolutionary War, a young British officer was made prisoner by the Colonial forces. During the campaign and his imprisonment, he wrote many letters at frequent intervals which were published upon his return to England. His comments on the campaign and his travails are of unusual interest, so much so, in fact, as to make his letters an important source of information upon Revolutionary War life and times. A letter written from Richmond, Va., on July 14, 1779 is of interest, as it adds to our knowledge of early carelessness with fire, which carelessness probably was as much responsible for conflagrations as the oft-expressed light-burning or controlled burning which was and is neither light nor controlled. But here's the extract:

"The town of Richmond, as well as the plantations around for some miles, has been in imminent danger, as the woods have been on fire, which for some time past has raged with great fury, and that element seems to threaten universal destruction; but providentially, before it had done any material damage, there fell a very heavy rain, which nevertheless, has not altogether extinguished it, as it is daily breaking out in places, but not so violent but it can be easily prevented from spreading.

"During the summer months, these fires are very frequent, and at Charlottesville I have seen the mountains on a blaze for three or four miles in length, they are occasioned by the carelessness of wagoners, who, when night approaches, after they have unharnessed the horses, fed them, pannelled them; and tying a bell round their necks, turned them loose in the woods to graze, make a large fire to warm them when they sleep, which on pursuing their journey the next morning, they neglect to extinguish, this communicating to the dry leaves which lay on the ground, spreads rapidly and causes these dreadful and dangerous conflagrations."

YE EDITOR DISCOVERS

During the past month, members of the Washington Office returning from field trips have brought with them stories of frenzied activity in the Regional Offices in the preparation of the maps and statistical summaries of the Land Use Plan. The activity and the frenzy have now shifted to the Washington Office, where the work of compiling and correlating the Regional reports is now at its height. In addition to the several members of the Forest Service engaged in this activity, 14 temporary assistants are now employed and additional names are being submitted to the National Resources Board for approval. Additional space has been rented in the so-called "Annex", five doors up the street from the Atlantic Building, and all the Branches have been raided more or less for tables, desks, computing machines, and other paraphernalia.

The Regional reports are disclosing many interesting and important situations, and as progress is made in combining them into a national report, new phases and aspects of the forest problem are presenting themselves in interesting ways which suggest the possibility that the ultimate value of the study will exceed earlier expectations. As a result of the present movement the forest problem is being better defined, and the wide cooperation by all agencies concerned obviously is promoting a better understanding and more complete mutuality of thought and action. While there can be no claim of complete unanimity and harmony of thought, the present Land Use Plan study seems to be a distinct step in the welding of all forestry agencies into one big family.

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The Shelterbelt is off to another start, as the Comptroller General has released a million dollars for this work. The original allotment of 15 million dollars set up by the Presidential Order was held up by the Comptroller on the grounds that the work was a long-time project and that as a long-time project it ought to receive final approval by Congress. Consequently, for the current fiscal year the amount set up has been greatly curtailed. The Forest Service, however, is planning to go ahead with its program just as far as the money will permit. The headquarters at Lincoln are now humming with activity. The general plan is to set up a regional organization with a State director in each of the States where a considerable part of the work is to be located. As the work is now to proceed very largely on an experimental scale, research activities will play a very large part in the project. The Lake States Forest Experiment Station is making a detailed study of the soils and climate of the region, in order to locate definitely the exact boundaries of the area in which the strip is to be planted. Detailed studies are also being made of the species to be planted and methods to be used. Personnel has already been recruited and is actively at work in the region.

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According to present plans, a meeting of the National Forest Reservation Commission will be held on an as yet undetermined date during the week beginning October 15. While the exact size of the purchase program to be considered at that meeting has not yet been determined, every circumstance indicates that it will be of considerable proportions.

Among other matters awaiting action by the Commission are several proposals for the establishment of new purchase areas, including 4 in the State of Alabama and 3 in the State of Indiana. Reports on 4 areas in the redwood type which are suitable for administration as National Forests also will be submitted to the Commission as a basis for selecting the one or two areas in which to make purchases.

The Weeks Law provides that no land may be purchased under its provisions unless the State by action of its Legislature previously has consented to such purchases. The purchase of a redwood area therefore was contingent upon such action by the State of California. At the recent special session of the Legislature consent was given without any limitation, either territorially or quantitatively by a vote of 65 to 0 in the Assembly and 36 to 0 in the Senate. Apparently the members of the State Legislature have a most sublime confidence in the reasonableness and rationalism of Bevier Show.

Among land owners at least, the Weeks Law acquisition program apparently is one of the most popular of the Government's activities. Hardly a week passes without the Branch of Lands receiving at least one application or petition in advocacy of new or enlarged purchase units.

SOME HUMOR ABOUT UNIFORMS

By Norman L. Norris, Sequoia

Well, I swan! Who ever heard of such an idea? In the Service Bulletin of July 16, L. S. Murphy brings forth the umprecedented idea that comfort should be given some consideration in selection of a standard type of clothes for Forest Officers. Is the man out of his head?

Every little while somebody pops off about our uniform. I read them all with interest, but just offhand I don't recollect anyone ever having suggested the idea that we should wear something that would provide comfort. The whole thing seems to have been based on appearance.

Probably few professions require harder physical exertion than ours. When it's a hundred in the shade and the smoke's rolling high and he's scrambling and clawing his way up a 60 percent ridge; when the sweat runs into his eyes and his breath comes in short pants, what garb do you find our F. O. wearing? It's ten to one you'll find him encased in that most infernally atrocious invention of the human mind: Form fitting chokebore breeches!

They are known as riding breeches. As a matter of fact, if they fit tight enough to look well, they cramp your knees so that at the end of a day's ride you figure you have a serious case of arthritis.

As for the name, I think it should be changed from "riding" to "all around" - they are the most all-around uncomfortable garb known, whether riding, walking, sitting or lying down. The only time they feel good is when you take them off.

The costume Murphy suggests would undoubtedly be comfortable for summer weather, though the appearance, in shorts, of some of the old-timers who have been straddling ponies for the last 30 years, might necessitate the application of considerable will power on the part of the public to keep a straight face. The stagged pants might show him off - or conceal him - to better advantage.

The CCC's have certainly taught us something of comfort. Every time I see them working without shirts I am envious. And every time I see a man cool and comfortable in a light, well ventilated straw hat I'd like to swap my Stetson.

A nudist, you say? Well, - no, not exactly. My idea of our uniform would be a straw hat, a pair of shorts big enough to pin a badge on and hold a notebook, and a pair of sandals. 'Course, if it ever got hot, we could always shed! --From R-5 Bulletin.

IS JACK PINE A PROLIFIC SEEDER?

Jack pine is commonly considered a prolific seeder, supplying sufficient seed each year to secure abundant reproduction. However, observations on the seeding of jack pine by the use of seed traps located both in uncut and in cut-over stands containing large numbers of seed trees, apparently upset this generally accepted view.

Because jack pine cones persist unopened upon the trees for many years, there is a tendency to overestimate the amount of seed produced each year. A 50 percent cone crop is frequently reported for example, when careful examination shows that the actual crop of new cones is only about 10 percent of full capacity.

Furthermore, the seed apparently continues to remain locked-up in unopened cones on the trees even after partial cutting. For example, during the summer and fall of 1933, a warm dry season, only one seed was found in nine seed traps (44 seeds per acre) in an 80-year-old cut-over stand on the Superior National Forest in Minnesota. Similar results were obtained in uncut stands on the Huron National Forest in Michigan (40 seeds per acre) and at the Michigan Forest Fire Experiment Station at Roscommon. Apparently the cones on jack pine seed trees cannot be depended upon to furnish sufficient seed for natural reproduction unless they are subjected to fire with its resultant injury to the parent trees.

On the other hand, cones in jack pine slash exposed to the heat of the sun in cut-over areas in northern Minnesota and Lower Michigan opened freely and scattered an abundant seed supply when the air temperature was 80°F., and the surface temperature 120°F. Tests on seed, from green, brown and old weathered cones, indicated satisfactory germination capacity, regardless of age.

Slash disposal by swamper (progressive) burning or by piling and burning soon after cutting destroys the greater part of this seed. If logging is done in the summer and the slash is not piled until fall, then some of the seed is dispersed, although the cost of slash disposal by delayed piling will be somewhat higher.--Technical Note, Lake States For. Expt. Sta.

THE BOSS AND THE LEADER

The boss drives his men; the leader coaches them.
The boss depends on authority; the leader on good will.
The boss inspires fear; the leader inspires enthusiasm.
The boss says "I" the leader says, "We".
The boss assigns his tasks; the leader sets the pace
The boss says, "Get here on time!"; the leader gets there ahead of time.
The boss fixes the blame for the breakdown; the leader fixes the breakdown.
The boss knows how it is done; the leader shows how.
The boss makes work a drudgery; the leader makes it a game.
The boss says, "Go"; the leader says, "Let's go!"--From R-3 Bulletin.

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SERVICE BULLETIN

CONTENTS CONFIDENTIAL

WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT. xxx THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER. Theodore Roosevelt

Vol. XV111 No. 22 Washington, D. C. October 22, 1934

TREES AS INDICATORS OF SOIL — 1775

By L. F. Kellogg, Central States For. Expt. Sta.

The opening of the Ohio Valley to settlement was accompanied by the appearance of considerable propaganda published in the form of a "Guide", "Manual", or "Prospectus". These publications were intended not only to encourage restless colonists and prospective settlers still living on the Continent to migrate, but also to tell them of the new country, to help them by passing along information, and perhaps to intrigue them into making the great adventure. One of the publications, written by "An American", appeared in London, in 1775, under the title "American Husbandry, Containing an Account of the Soil, Climate, Production, and Agriculture of the British Colonies."

In Volume II, appears a chapter on "The Ohio" in which the author points out signs by which settlers are "to judge of the soil not only here, but through all these central colonies, and to the southward."

"The trees, which are the spontaneous product of the land should in general be first attended to; if they abound with fine tall, red hiccories, white oaks, chestnut oaks, scarlet-oaks, tulip trees, black walnuts, locusts, mulberry trees, etc., they may be pronounced good, and the value will usually be in proportion to the size and straitness of those trees; pines, live oaks, laurels, bays, liquid amber, and water oaks are, among others, signs of bad land; and in general that soil will be best which is free from underwood: nor should the planter take a few trees of any sort as his guide, but a predominancy of them in whole woods. This rule of judging must be united with that of the appearance of the soil when dug into, particularly colour and depth; the black mould on a bed of loam is best; that on clay, good, but the light sandy tracts are in general bad, unless they are of a dark colour, and moist, with good trees growing from them; in that case they may be excellent; for sands differ as well as loams; the misfortune is, that in America the sands are generally white and dry, and produce little besides pines.

"Besides tracts which may come under this description, he is farther to examine the meadows which are composed of similar soils, but without any trees, being covered with grass; these are to be judged by the height, thickness, and luxuriance of that grass. These tracts are common on the Ohio, and prove how valuable the country should be esteemed: they, like the woodlands should be examined with the spade, in order to know the appearance of the soil. Besides these there are marshes or swamps, but not in great quantities, as in the maritime parts of America; the value of these depend on two circumstances, the richness of the soil and the ease of being drained: the former is seen by the products; cedars are good signs, though not very common; cypresses generally are found in them, from the tallness, size, and beauty of their stems: as to draining, it depends on the situation, and on examining the means of carrying off the water, as in all other counties." (Quoted in "The Ohio Prospectus for the Year 1775", by A. J. Morrison, Toledo, Ohio Archaeological and Historical Society Publications, Volume XXIII. P.232-255; P.247-248.)

Colonists and immigrants moved onto the frontier, settled, cleared and farmed the land. The "black mold on a bed of loam" is gone, and in too many instances on sloping lands, the loam has followed it down the stream channels into the Ohio and the Mississippi. Today, 1934, we are faced with the perplexing problem of what trees to return to these sloping lands, what species can be most successfully and economically planted capable of stabilizing and controlling the soil surface, and also yielding a desirable crop of forest products.

STREAM PROTECTION

(Extracts from reports of Eastern Supervisors in response to inquiry as to what effect National Forest ownership and management had brought about in streams which prior to National Forest extension were in private ownership)

"It is quite probable that if actual measurements were made, streamflow condition in Little River and Zealand River would be found to improve materially in another period of 20 years, whereas the present condition of the watersheds with their stands of immature birch and cherry which followed the burn of 1903 is probably little better from the standpoint of run-off control than in the second year following the fire." - White Mountain.

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"In the first place, most of the streams in the National Forest within the drainage of which there is no cultivated land have at no time carried an appreciable amount of silt as far as could be determined from old local residents. Many of the streams having cultivated land in their drainage carry considerable silt after rains, indicating the need in many cases for the acquisition and reforestation of these lands. To the present only a small portion of these cultivated lands have been acquired. The change has therefore not been marked." - Pisgah

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"No attempt has ever been made to measure the stages of streams entirely in the Forest nor of the sediment load they carry. However, this much can be said, the North Sylamore Creek in the Eastern Division of the Forest has received almost perfect fire protection for 15 years and it now can stand a 2 foot rise in level without showing any sediment while it can be remembered to carry considerable silt with every rain before protection started." - Ozark

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"The same history applies to the headwaters of the Caddo River in Montgomery County. Prior to 1925 that area had also been logged to a considerable extent and numerous forest fires had removed the cover from both private and National Forest lands. Prior to that a road went up the valley which crossed the Caddo River at various points on high bridges, both wood and steel, with concrete abutments. But following these logging operations and fires, the run-off was so fast and great that every bridge along this watercourse was washed away. Since 1925 the history of the watershed has been one of successful protection from fire and although the weather reports show that the rainfall has been as great and as concentrated as it was when the bridges were washed away, yet there has been no noticeable damage in the last four years."

"The South Fourche River is another case in point. The Fort Smith Lumber Company removed the timber from a large part of that watershed some fifteen years ago and the land was thereafter severely burned. Following that, roads which had existed for a long time were washed away, large gullies were made along the bank and agricultural fields either scoured out or filled up with rock and debris. The land is again covered with a canopy of small bushes and trees and the severity of the run-off has already dropped to the point where it could not be called unusual." - Ouachita

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"Warwoman Creek in Rabun County, Georgia. Along Warwoman Creek is some very fertile bottom land. Ranger Nicholson who has lived in this section for twenty years advises that before protection was instituted the local land owners were annually troubled by floods which covered this bottom land and destroyed their crops. Since protection has been instituted, these floods have decreased in seriousness and in frequency. These facts are also attested to by local inhabitants." - Nantahala

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"The watersheds of Shavers Fork and Tygarts River south of Elkins, West Virginia, are comparable in area and topography. The watershed of Shavers Fork is approximately 95 percent forested while the watershed of Tygarts River is approximately 50 percent forested. During the drouth of 1930, Tygarts River remained completely dry for a period of two to three months and it was necessary to pump water from Shavers Fork to supply the City of Elkins. Due to the high percentage of forested slopes in the Shavers Fork watershed, this stream maintained a satisfactory flow throughout the drouth of 1930." - Monongahela

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"An old gentleman, a resident of Stanley, Virginia, has made the following statement in regard to Cub Run and Pitt Spring streams, that 'before the Government purchased the land which these streams drain they would get very high from local electrical storms and very muddy. Since the area drained by these streams has been protected from fire and heavy cuttings they very seldom get high and do not get muddy at all any more. These streams have a more even flow the year 'round now than they had.'

"Mr. Charles Golliday, who used to operate a flour mill on Passage Creek made the following statement: 'My flour mill was run by water power and before the Government purchased the land which Passage Creek drains it was necessary for me to grind a while and then wait for a head of water, as the flow of water was so low that I could not run the mill without interruption. After the area was protected from fire and heavy cuttings for a period of seven or eight years the flow of water increased, so that I could grind all day long and would not have to wait on water.'

"Ranger Crisman, who has spent his entire life on the area which is not a part of the National Forest, says that the same may be said of other streams in the district in regard to the flow of water and their not getting muddy as they did before the Government placed the drainage areas under protection.

"Justice Cline of Stuarts Draft, an ex-university professor of geology, relates his experiences in regard to erosion as follows: 'When I was a boy Coles Run, Johns Run and Kennedy Creek, now in the National Forest in Augusta County ran down out of the mountains to South River, and the big trout came up to the heads of those streams to spawn. I am 58 years old and I can remember when these mountains were covered with big pines and oaks. The timber has been cut and the mountains burned year after year. The streams do not reach the river, but dry up at the edge of the farmed land.'"

"Arthur Garrett of Buena Vista, Virginia, lives on the summit of the Blue Ridge. He has known and observed Browns Creek and Enchanted Creek for the past 30 years. These streams are in the National Forest in Amherst County and have been protected for about 20 years Twenty years ago farming was common on these streams; the streams were muddy after rains. Twenty years ago no trout had been observed in Enchanted Creek. Trout are common there today, and the streams are not muddy after heavy rains.

"Mr. T. B. Allen lives on the South Fork of Buffalo River near Willow, Virginia. A branch of this river furnishes the Allen family with drinking water. Before the watershed of this stream became a part of the National Forest and received protection, erosion was severe and the water was unfit for drinking purposes." - George Washington

"RANGERS OF THE SHIELD"

By Jno. D. Guthrie, Washington.

Again the Editor of "American Forests" scores in the book publishing game! Just a few months ago he brought out "Youth Rebuilds", the inside story of the CCC. Now a collection of forest ranger adventure tales called "Rangers of the Shield" is issued by the American Forestry Association. The book contains stories of drama, humor, pathos, and adventure as lived by forest rangers on the western National Forests.

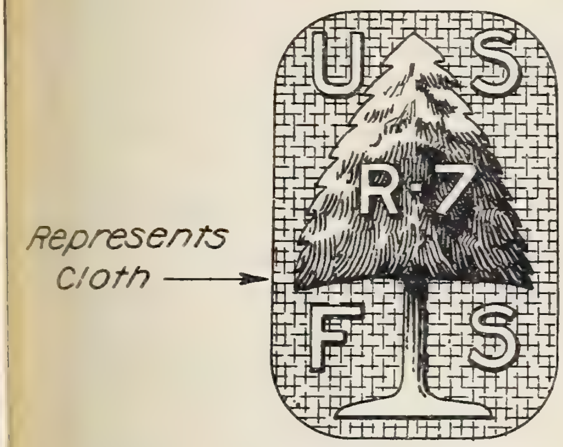
There are thrilling forest fire stories, encounters with bear, game poachers, incendiaries, and other varmints of the wilderness. There are tales of wild night rides, of risks on dark cliffs, of searches for lost persons. The very titles of the stories bring up pictures of wild canyons, high places and the back of the beyond - "The Big Fire", "The Killer", "Lone Wolf Poachers", "War Eagle's War", "A Leap in the Dark", "The Search for Jimmy Blake", "The Trap", "All Through the Night", "Hunting the Forest Outlaw", etc. The different western States are well represented both in locale and authors. There are stories by the well-known Will C. Barnes and Charles H. Shinn, by Constance Mainwaring (a ranger's wife - the only woman author in the collection), the Perrys - Walt and E. L., both good writers, by Julian Rothery, by the famous Ranger hero of Idaho's 1910 fires, Edward C. Pulaski, and by many other ranger-authors. All the tales have appeared in "American Forests".

The book is illustrated, has a preface by Ovid Butler, the Editor, contains 29 stories by 27 authors, has 270 pages, is attractively bound, with an even more striking jacket cover carrying George Cecil's famous silhouette at Whatcom Pass, and the reproduction of the Service badge. It is "Dedicated to the Men of the Pine Tree Shield, the United States Forest Rangers."

In collecting and publishing these stories in book form Butler has done another real service to the forest rangers and the Forest Service. The number of popularly written books dealing with the forest ranger or the National Forests is distressingly small. Of scientific bulletins, technical treatises and forestry textbooks there are hundreds, but the number of books dealing intimately and correctly with the forest ranger, his life and his work, written for popular reading -- one may count them on the fingers of one hand! As Butler says - "the ranger of the Pine Tree Shield is one of the most interesting and dramatic figures in America today. Yet his life and work remain a mystery to a great many people - probably because rangers seldom talk or write of personal deeds and experiences." This book should prove popular just now with the general public because of the increasing interest in forestry and conservation throughout the United States.

SUGGESTIONS FOR NATIONAL FOREST UNIFORM
(COLLAR ORNAMENT)

NO. 1



Represents cloth

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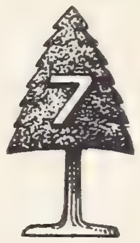
Letters and numeral - gold or silver

NO. 2



Tree - green enamel
Numeral - gold or silver

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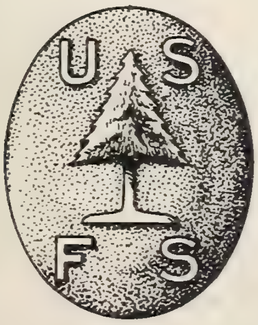
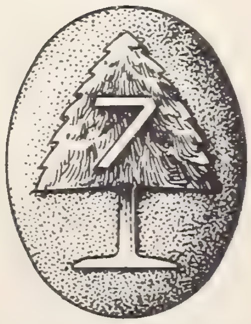


Tree and letters - green enamel
Field - gold or silver

NO. 4



Tree - green enamel
Field and numeral - gold or silver

By W. L. Maule, White Mountain National Forest

PRESIDENT WILL REQUEST CONTINUATION OF CCC INDEFINITELY

(From Washington Post, October 8, 1934)

Declaring "this kind of work must go on," President Roosevelt yesterday made known his approval of the activities of the Civilian Conservation Corps.

In a short note to Robert Fechner, director of Emergency Conservation Work, the President conferred his blessings on this, one of the first "emergency" agencies, which was created by Congress to last only until March 31, next. He wrote:

"I have been greatly interested and encouraged by the fine report of your visits to CCC camps in many parts of the country.

"This kind of work must go on. I believe that the Nation feels that the work of these young men is so thoroughly justified and, in addition, the benefits to the men themselves are so clear that the actual annual cost will be met without much opposition or much complaint."

This was interpreted to mean the Administration not only will seek to have the present CCC extended by the next session of Congress, but that the President envisages large-scale forestry work as a permanent function of the Government.

Actual cost of the emergency conservation work, which includes the CCC and smaller, related undertakings, has been about $440,000,000 for the first 17 months of existence. Expenditures are now running slightly more than $1,000,000 a day -- an average of $1,000 a man a year.

Although the president did not go into particulars, it was believed he regards the CCC in much the same light as the NRA. He is understood to feel the CCC, like the NRA, should undergo gradual evolution before, finally, the way is clear for establishment of a more-or-less permanent system.

In his report to the Chief Executive, Mr. Fechner said that conditions had been found uniformly "excellent" on an inspection tour of 125 camps in ten States, on which he was accompanied by representatives of the Army, the Forest and Park Services, and State officials.

He declared that, while an exact appraisal was impossible, vast benefits had resulted from CCC work in preventing fires in the Nation's worst drought year, in improving National Forests, in conserving water supplies, and, finally in the men themselves.

"It is difficult," he said, "to make such a report as this without seeming to be overenthusiastic, but I assure you that it would be impossible to exaggerate the fine results that have been accomplished by this great movement that was so strongly sponsored by yourself."

Total appropriations for Emergency Conservation Work since it was launched April 5, 1933, have been $749,853,945, including $48,000,000 allocated from the President's special $525,000,000 drought relief fund. Of this amount, $315,690,359 was unexpended on October 4-- enough to carry on the CCC until next summer.

Up to September 1, the CCC had employed more than 850,000 persons for varying lengths of service. The authorized enrolled strength of the forest camps is 370,000 including young men, war veterans and Indians. About 10,000 CCC workers drop out each month to accept other work or for other reasons, increasing the normal six-month turnover.

Cash allowances to CCC workers totaled $136,000,000, as of the first of last month, of which amount an estimated $113,000,000 was sent home. The men are enlisted for six-month terms on the condition that five-sixths of their monthly allowance of $30 go directly to their families or dependents. More than 1,700 such camps will be operated this winter.

YE EDITOR DISCOVERS

The Forester's schedule of public addresses is a full one for the month of October. Five separate talks have already been made by him during the Forest Festival held at Elkins, West Virginia, on October 4-6. Other programs on which he will speak are:

State Foresters Association meeting at Knoxville, Tenn., on October 17.

The American Forestry Association meeting at Knoxville on October 18-19. He will make two talks at this meeting, one of which will be broadcast over an NBC network.

The American Civics Association meeting at St. Louis on October 26. "Forest Land Planning" will be the subject of this address.

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In a recent letter to the Regions regarding the Shelterbelt, the Forester said, "We all realize that this project represents a progressive experiment by man to ameliorate adverse natural conditions, the full result of which can not yet definitely be stated. It involves exploration of facts, conditions and possibilities; collection of technical, social, and economic information. This work is now under way and plans and methods are being developed for extending it on such scale as the next Congress may determine shall be employed. In the meantime obligations, definite or implied, will not be incurred beyond the one million dollars now available."

Demands of the Emergency Conservation Work program are now such that the Forester has asked Fred Morrell actively to resume his previous responsibilities therewith.

Paul V. Roberts has been placed in charge as Acting Administrative Director of the Shelterbelt Project. His duties will be to organize and supervise all administrative field operations, including actual application of technical standards.

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Since the last meeting of the Forester's special fire committee several years ago, many changes have occurred in the fire problem confronting fire executives and researchers. A meeting is urgently needed in order to compare experiences and consolidate and harmonize ideas for the whole Service on a fire control program for the future. The huge increase in roads, trails, telephone lines, and other protection facilities resulting from ECW and Nira work have radically altered conditions under which fire control will be carried on. Many new items of equipment are available and important improvements have been made in old equipment. Changes in the physical conditions entering into fire danger are important.

Present plans are that sometime during the winter this committee, in an enlarged form perhaps, will hold a session more or less comparable to the fire meeting at Mather Field so many years ago. By that time searching analyses of 1934 fire experiences will have been made, and thinking and planning for the future can be done with the benefit of whatever light 1934 throws on the subject.

The disconcerting increase in man-caused fires during 1934 will give point to the plans now being made for a new intensity of fire prevention efforts during 1935. These plans will be reviewed and given the final touches at the winter fire meeting. Paul G. Redington has been selected to specialize on the large amount of work which must be done from the Washington Office in laying a solid foundation for next year's fire prevention campaign. Plans must be formulated in more definite form; a long list of national organizations must be interested and drawn into the campaign; and such written and other material as must be prepared from the all-Service standpoint will have to be ready for the Government printer before long, if it is to be available for next season.

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The question of whether the establishment of a National Forest markedly increases the fire hazard of a stand of timber has been given new emphasis by the proposal of the Commissioner of Indian Affairs that an area in the Nantahala Forest not far from the Cherokee Indian Reservation be protected from the proposed invasion of a Forest Service truck trail. Mr. Collier's letter dwelt upon the primeval and pristine beauty of the area and its virgin and unimpaired stand of timber, and deplored the idea of its invasion by motorized transport.

The Regional Forester's prompt response was that fires were of frequent occurrence on the other side of the ridge, that the proper protection of the area made it necessary to create conditions under which a large aggregation of man-power promptly could be delivered on the ground, that such man-power only was obtainable at a certain point, and that its transportation from that point urgently necessitated the proposed road.

When this case comes before him for signature to the reply to Mr. Collier, Secretary Wallace, who is both an analyst and a philosopher, may meditate upon the fact that without any road whatever and subject to all of the perils of coon hunting, turkey hunting, etc., this area somehow has managed to produce an exceptionally good stand of timber which is now of unique quality and unusual interest. It might not be unreasonable for him to conclude that there must be some quality or characteristic of National Forest use which increases or greatly aggravates the normal fire risk or hazard. Such a conclusion would be more charitable than the deduction that the Forest Service was recommending a considerable expenditure of public funds in the construction and maintenance of a road which was not absolutely essential to the effective management and protection of the National Forest.

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The three members of the Cabinet who also are members of the National Forest Reservation Commission are exceptionally busy these days, and difficulty has been found in fixing a date for the next meeting of the Commission upon which all three Secretaries would be in Washington and able to attend the meeting. They are all keenly interested in the acquisition work of the Forest Service and all personally desirous of attending the next meeting, at which there will come up for consideration not only a program that now promises to be of very considerable proportions but also programs of new units in several States which recently have authorized Federal acquisition, notably Alabama, Indiana, and California. In consequence, it has been necessary to postpone the meeting of the Commission, which according to present plans will be held, if practicable, during the last week of October, the exact date not having yet been determined.

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The Special Grazing Conference, preparations for which have been going on for several months, will be held at Ogden, Utah, beginning November 1. After introductory statements by the Forester, Assistant Forester Rachford, and each Assistant Regional Forester, the following major topics will be presented by the Regions:

(1) The Federal range in its relation to recent social and economic trends in land use and national planning - an examination of basic objectives, policies, standards and instructions in the light of recent developments.

(2) Integration and coordination of uses - ("Uses" refers to all uses of the National Forests). The land-use planning idea applied to our specific problems.

(3) Management of the Range (physical factors). "Range" refers to the resource both soil and cover, producing feed for animals either wild or domestic. "Management" includes any manipulation of factors directed toward the attainment of resource objectives.

(4) Problems in Range Administration - The use of the range by domestic stock with particular reference to the welfare of communities.

(5) Game Management - the use of the range by wild life.

(6) Personnel Needed - Its organization, training, supervision and control.

(7) Public Relations in Range and Wild Life Management - In general, and with special reference to the public educational value of material developed in this meeting, and how it may be most effectively used.

About 75 men from the Regional and Washington Offices will attend this meeting, including representatives of the Biological Survey who will be present for one or two days during the discussion of game management and cooperation with that Bureau. The meeting will be held in the assembly room of the new Federal Building.

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"The Part of Forests in the Destiny of West Virginia" was the subject of a 35 minute talk by Secretary of War Dern at the Forest Festival held at Elkins, West Virginia, on October 4. He spoke primarily in his capacity as president of the National Reservation Commission, reviewing the National Forest acquisition program in the East, and its objectives.

CLEVELAND TO HAVE LARGEST TELESCOPE

On Palomar Mountain in the Cleveland National Forest, California, at an elevation of 6126 feet, will rise the world's largest telescope, with a 200-inch reflecting mirror, which will have the vision of 360,000 human eyes, according to estimates of Dr. Frederic C. Leonard, chairman of the department of astronomy at U.C.L.A. It will render stars of the twentieth magnitude visible, and will bring the moon near enough that large buildings, if there are any on the moon, will be visible to observers.

The project is in the hands of Dr. George Ellery Hale, Dr. Robert A. Millikan, Dr. Walter S. Adams, Dr. Arthur A. Noyes and Henry M. Robinson.

Palomar Mountain was chosen as the best site within working distance of the Caltec Institute and the Mt. Wilson Observatory on the Angeles. It is eighty-five miles south of Pasadena and eighteen miles northeast of Escondido.

Only after tests of atmospheric conditions had been carried on over a period of several years was it found to be the best for the new telescope.

It is planned to establish an airport on the nearest flat area so that astronomers can fly back and forth between the Caltec campus and the telescope, it is understood.

Clear skies, steady temperatures, and absence of storms are other factors that influenced the site selection.—From R-5 Bulletin.

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SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES. WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XVIII No. 23 Washington, D. C. November 5, 1934

CLIPPING THE WINGS OF FORESTRY

By H.R.H. The Prince of Wales, President of the Empire Forestry Association at last annual meeting.

I regret to notice that retrenchments have been taking place in some of the Forestry Services of the Empire. No doubt when bad times come along Governments have a great difficulty in making ends meet. At such moments forestry, as a long-term investment, is a tempting victim, since the results of retrenchment are not here immediately visible. It is a great pity that it should be so, for there is no State enterprise which, for success, demands to the same extent a definite policy steadily pursued from year to year - indeed, from generation to generation. Forests as a rule take a lifetime or more to reach maturity, and to make them productive they need close and skilled attention like any other crops.

The motto of the Royal Scottish Forestry Society - "Ye should aye be sticking in a tree; it will be growing while you're sleeping" - is good as far as it goes. But forestry in these days has advanced with scientific research far beyond that conception. It is recognized that forests must be carefully protected from fire, insect and other damage, that the amount of timber cut annually should be limited to the annual growth and that the marketing of timber and other forest products should be well organized.

These requirements naturally demand the continuous attention of a competent staff of experts. I would, therefore, plead with all the Governments of the Empire which have forest assets in their care to hesitate long before reducing their establishments in periods of depression. Good and bad times will always follow one another, and it would seem wiser to count on this sequence and build up policies and services accordingly. Changes in policy every few years are demoralizing and wasteful. Along such a road no real progress is possible.

Another reason why the forest services fall victims to the axe so readily is that in the legislative bodies of the Empire there are comparatively few members qualified to speak with weight and authority on forest questions. Measures involving far-reaching changes and drastic retrenchments may be hurriedly enacted because of the lack of well-informed effective criticism. I should like to see in every legislature some members who would make it their business to become thoroughly conversant with the general principles of Forestry and with the special Forest Policy of their own country. They would then be in a position when necessary to exercise a wholesome restraining influence on those in authority and help to mould useful measures to further the interests of this great industry.

It may be thought by some that I stress too much on this matter of staff. But the total area of forest in the Empire is approximately 2,300,000 square miles, and that surely is an asset of immense value. These forests are administered by some 1500 forest officers only, or roughly about one forest officer to 1000 square miles. I think you will agree that reductions in so slender an establishment certainly call for comment. — From the Illustrated Canadian Forest and Outdoors Magazine.

ON THE COUNTY

By Thornton T. Munger, Pacific Northwest For. Expt. Sta.

We spent a day touring the by-roads in the coastal hills in Oregon where narrow, alluvial valleys meet tumbled hills. And what did we find—Forest Economist Wilson, Soils Professor Torgerson, Technologist Kerns, and I? Farms without farmers, buildings without roofs, orchards without fruit, fields without crops, crumbling schoolhouses with the lessons of 15 years ago still hidden in the little hardwood desks; and everywhere the forest creeping in to reclaim what was mistakenly taken from it. The abandoned farms pay no taxes now; they never could afford to pay for the roads and schools they required. The lands are now "on the county". Here and there one with rugged individualism, if naught else, is sticking it out. We found one such. He has a wife and thirteen children. He rents a "forgotten farm" for $1 a year, but it will not support him. The county gives him a dole of about $35 per month. The county wants to move him to a valley farm where he can be self-supporting. But he elects to stay, proving that beggars can be choosers. He petitions the county for a school for his family and a better road to his dollar farm. This is tragically just one more grim joke "on the county"—and the rest of the community.

The country over, the misuse of land is followed by social degeneration, wastage of soil or forest resources, instability of land tenure and injustice to legitimate land owners. Is there no way to stop it?

MANAGEMENT PLAN FOR ALASKA BEAR

A plan for the management and perpetuation of the famous brown bear of Admiralty Island, Alaska, has been worked up cooperatively by the Forest Service, the Biological Survey, and the Alaska Game Commission. The primary purpose of the plan is to coordinate the management of the bear population with the well-rounded use and enjoyment of other commercial, recreational, and scenic resources of the Island.

Principal features of the bear management plan include the following:

Areas needed for protection of the bear will be closed to hunting. Such closed areas will be extended, or replaced by others, as changing conditions warrant. In general, closed areas will include general recreation areas; areas with outstanding heavy stocking of bear in the spring when the cubs are small; small, heavily-stocked areas of ready accessibility where bears can be observed by naturalists, photographers, and the general public; and lands in the vicinity of logging camps, trollers' camps, and other centers of seasonal occupancy, where closure may be advisable to assist in controlling casual or illegal killing.

Limited bear hunting may be permitted, subject to bag limits and to closure for entire seasons or parts of seasons to prevent jeopardizing the bear population. Permitted yearly kill will never exceed the yearly net increase.

A system of trails, portages, shelter cabins, and observation blinds will be constructed for the benefit of naturalists and recreationists. Some of these already have been completed, with the aid of CCC workers.

An attempt will be made to increase the bear population if further studies show that this will not result in overstocking.

Under existing game laws, shooting from power boats, or the use of dogs in taking game animals, is not allowed, and the sale of pelts is prohibited. A resident may kill a brown or grizzly bear when necessary to protect persons or property.

Admiralty Island is especially adapted to the management of the bear in coordination with other resources. The location of its commercially valued timber stands and salmon streams and canneries near tidewater leaves a vast interior region of nearly 700,000 acres into which there is no necessity for woods workers to penetrate. This interior region of muskeg, scrub timber, and alder and willow thickets is the preferred habitat of the bear at certain seasons of the year. Admiralty Island, with a total area of 1,065,000 acres, is a part of the Tongass National Forest.

The Alaska brown bear, for which Admiralty Island is famous, is one of the largest bears of the world. Specimens weighing 1600 pounds have been noted. Five species have been differentiated on Admiralty Island by C. Hart Merriam, a noted authority on these animals, but the species are indistinguishable in the field. The animals spend about five months of the year in hibernation, during which period the cubs are born. Most of the summer season is spent in the higher country of the interior, except for frequent excursions to the streams during the salmon spawning season.

The estimated bear population of Admiralty Island in 1932 was 900 animals. Total brown bear population for the two National Forests of southern Alaska is estimated at about 4,500 animals.

Admiralty Island has an abundance of other wildlife resources, in addition to the bear. The small Sitka deer is numerous on all parts of the Island, and local fur-bearers include beaver, mink, land otter, muskrat, weasel, and marten. Upland game birds are ptarmigan and grouse, and migratory waterfowl are abundant in the fall. Most of the streams and lakes afford excellent trout fishing.

A report outlining the bear management plan for the Island has been prepared by B. F. Heintzleman, formerly Assistant Regional Forester in Alaska, and H. W. Terhune, executive officer of the Alaska game commission and representative of the Biological Survey in the Territory. The report is being published as Dept. of Agriculture Miscellaneous Publication No. 195, "A Plan for the Management of Brown Bear in Relation to Other Resources on Admiralty Island, Alaska," and is now with the printer.

PAIRED MINIMUM TEMPERATURES AS INDICES OF FAIR OR FOUL WEATHER

By H. T. Gisborne, Northern Rocky Mountain For. Expt. Sta.

In April, 1933, the attention of Region One Forest officers was called to a simple method of determining the possibility of unsettled weather, including lightning storms. This method is not infallible and best results are obtained only during July and August, yet any simple process that assists in estimating either the possibility of lightning or the probability of fair weather can be used in this Region to get better forest fire control at less cost.

The present method is based on the principle that warm air rises into a colder layer above it, thereby creating what is called a convectional storm. Such a flow of air always increases the wind velocity; and if the warm air has a high moisture content this moisture is condensed when it reaches the colder layer aloft, thereby forming clouds which may, if sufficiently turbulent, generate lightning and/or precipitation. A study of weather records for pairs of adjacent stations at high and low elevations, such as a lookout station and a ranger station not more than 10 or 12 miles away, showed that the minimum temperatures at these pairs of stations can be used dependably to indicate the probability of fair or foul weather each day. This study showed the best dependability for July and August but forecasts based on comparisons of minimum temperatures during June, 1934 have also been quite accurate, as shown.

The method of comparing these minimum temperatures is indicated by the tabulation of the records for Elk Mountain Lookout (elevation 5348) and Bungalow Ranger Station (elevation 2250) on the Clearwater National Forest. As shown in this tabulation, when the minimum at the lookout is lower than the minimum at the ranger station, unsettled weather is indicated. When the ranger station has the lower minimum, fair weather is most likely to occur in that vicinity that day.

Sample of Forecasts Based on Paired Minimum Temperatures

Date	Minimum Temperature in Morning		Difference	Forecasts Based on Difference°	Actual Weather
	Elk Mtn.	Bungalow			
1	35	46	–	Unsettled	Rain
2	34	40	–	"	"
3	42	49	–	"	Thunderstorms
4	39	49	–	"	Unsettled
5	41	40	+	Fair	Thunderstorms
6	43	46	–	Unsettled	Rain
7	42	49	–	"	"
8	40	48	–	"	"
9	48	49	–	"	Fair
10	54	49	+	Fair	"
11	57	50	+	"	"
12	60	58	+	"	"
13	55	49	+	"	"
14	53	46	+	"	"
15	50	46	+	"	"
16	45	42	+	"	"
17	48	43	+	"	"
18	49	52	–	Unsettled	Unsettled
19	41	42	–	"	Fair
20	43	42	+	Fair	"

° + indicates fair, – indicates unsettled weather.

This record for early June contains 10 forecasts of unsettled weather, of which two are in error, thereby showing 80 percent dependability. Of the 10 forecasts of fair weather, only one was wrong, showing 90 percent dependability. This greater dependability in indicating fair weather was also found by the original investigation of the records for three pairs of stations. That investigation showed a dependability of 84 percent for unsettled forecasts, and 91½ percent for fair weather forecasts during July and August.

Standard minimum thermometers should be used for this work, each properly exposed either in a standard meteorological instrument shelter or in a well ventilated box that shields the thermometer from both rain and sunshine. The usual exposure of the instrument is about 4½ feet above the ground. The thermometers cost about $3.35 each when obtained through the Forest Service.

ACHIEVEMENTS ACE HIGH

By Emma H. Morton, Region 6

Coming as the highlight in a routine day, W. F. Staley, Assistant to the Solicitor, received a thrill recently. About mid-afternoon a roughly dressed stranger came to his office and stated he wished to enlist Stanley's assistance in obtaining for him from the Government some financial remuneration for at least a part of the outstanding work he had done. These services were of vital importance to the U. S. Government as well as the public at large.

Some of the accomplishments for which he took credit and sought pay were: That he had engineered negotiations and finally accomplished the end of the World War; that he had made the original sketch and plans for the giant Lexington and the Los Angeles air ships, as well as for the radio and the aeroplane. Also he stated that no improvements had been made in airplanes since his original plans 25 years ago.

Right modestly, he admitted that he had secured criminal evidence and tracked down Hickman for California, and Fall and Doheny for the Government. Just for good measure he added that he had been digging up evidence for the U. S. for many years - in fact, ever since the unpleasantness with "Sitting Bull".

Was our face red when "Judge" Staley told us about all this. Why man alive, we had always thought Woodrow Wilson, The Wrights, Senator Tom Walsh, and an eastern Oregon traffic cop were "among those present" when some of these events made history.

"THE UNIFORMS GOSSIP GOES ON AND ON"

By Roy M. Truman, San Isabel

I presume we have all read these articles with more or less interest, being personally involved.

The article by Dana F. Kirkmire, of the Washakie, brings another question to my mind. I wonder how many of our field men have worn the sturdy 16-oz. two-ply cotton whipcord garments in the forestry green. I find the garments made by the Fechheimer Bros. Co., to be of very good value, and the styling, and tailoring, much better than the ordinary run of ready-made clothing. While these garments have proved to be satisfactory for rough field work, it is always considered advisable to wear coveralls when handling paint, etc.

The entire outfit, consisting of jacket, breeches, and trousers, can now be purchased for a total of $10.75, which is not much more than the cost of any kind of a miscellaneous outfit, and to my mind it is much more appropriate. I believe it is possible to have a suitable, and practicable, uniform for all kinds of work if one is desired.

DEFORESTATION AND CLIMATE

By E. N. Munns, Washington

There have been some, even among foresters, who have cast aspersions as to claims made regarding forest influences, and especially those relating to climate. As a further comment on this we find a note in the Review of Applied Mycology on some diseases of the cacao in St. Thomas and Prince Islands.

In connection with the deadly disease of the cacao called "morte subita" in St. Thomas Island, the gradual modification of the insular climate is stressed, especially because it relates to excessive deforestation and drainage in order to meet plantation requirements. Formerly enjoying a temperate moist warmth throughout the year, the Island is now subject to sharply fluctuating extremes of temperature and humidity to which cacao is especially sensitive. The importance of this factor as the responsible cause of "morte subita" is suggested by the fact that it was completely absent from Prince's Island until the big expansion of 1929 when large areas of forest were cleared and the local climatic conditions underwent the changes mentioned. With this change in the local climate, the disease became prevalent.

In the investigations described, the author remarks that "the sole cure for these disorders is the restoration of the essential conditions for growth – good soil, humidity, shade, and protection from wind."

YE EDITOR DISCOVERS

Because he personally felt that a certain similarity of fundamentals existed between the mineral problems and the forest problems, and in recognition of the work the Forest Service had done in studying such fundamental problems, President Roosevelt, when creating the Mineral Policy Committee last spring, included Mr. Silcox as a member thereof. The activities of the committee are slowly focusing and crystallizing into a report which, when submitted, will have much of interest to foresters.

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The number of forest fires reported to October 20 was 10,148, the largest of any year in the history of the National Forests. Man-caused fires were 5,384, against an average for recent years of 4,006. The highest number of man-caused fires for any single year in the history of the National Forests was 5,549 in 1931. Unless we have some miraculous weather or miraculous restraint of man-caused fires between now and December 31, the number of man-caused fires for the calendar year 1934 will represent a lamentable all-time record.

The area burned to October 20 was 535,000 acres, against an average for recent years of 378,000 acres, but the 1934 loss is still below the area burned in 1931. With reasonable success during the rest of the present calendar year, the loss in area should be below the last previous "bad" year.

There have been 7 generally recognized "bad" years during the 30 years of National Forest experience. Losses of area during these years range from 2.56 percent in 1910 down to .29 percent in 1934.

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Various circumstances have necessitated postponement of the next meeting of the National Forest Reservation Commission. Present prospects are that it can be arranged for the week beginning November 12. The acreage of optioned cases awaiting consideration of the Commission passed the million acre mark shortly after the middle of October and possibly may approach the 1,500,000 acre mark by the date of the meeting. It thus will be possible to secure approval at a single meeting of the Commission of more land than had been purchased during any two years prior to the allotment of the twenty million dollars.

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The Land Use Planning Report activities of the Forest Service rapidly are approaching their climax. Over in the so-called "Annex" to the Washington Office, 24 statisticians, cartographers, and stenographers are working vigorously on various recapitulations of field data, while the Office of Drafting is devoting much of its energy to the preparation of graphs, dot maps, and other graphic presentations of fact. Other stenographers work early and late typing up the final contributions on the many phases of the report which relate to forestry. The results to date warrant the conclusion that on this project the Forest

Service has made a noble effort and one that has been or will be distinctly worth while.

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Recent R-6 news releases contained the following interesting facts:

"Forest truck roads built by the Civilian Conservation Corps in Oregon and Washington, if stretched in single line from the Pacific Coast, would reach across the continent and back to Chicago.

"Forest fire breaks constructed would reach across the States of Oregon and Idaho and CCC built telephone lines would connect Astoria, Oregon, with New York City."

"Nearly 7,000,000 acres of logged off land in western Oregon and Washington are classified as recently logged, burned or not satisfactorily restocking with new growth.

"The total forest land in western Oregon originally comprised 16 million acres. Of this original stand roughly 2,000,000 acres have been logged. Approximately 5,250,000 acres have been cut over or burned, of which about 2,000,000 are satisfactorily reforested and 3,400,000 are poorly reforested, recently logged or devastated. Approximately 11,000,000 acres are still timbered, but this area includes a large acreage of high mountain types of doubtful commercial value.

"In western Washington, the total original forest area was roughly 15,000,000 acres, of which 1,500,000 acres are now in agriculture and farm woodlots. Roughly 5,000,000 acres additional have been logged or burned, of which 1,500,000 acres are satisfactorily reforested and 3,500,000 are classified as recently cut over, devastated or poorly restocked. Private holdings of the 15,000,000 acres are roughly 9,000,000 acres."

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Perkins Coville has been transferred from the Branch of Research to the Forest Code work in the Washington Office. He will assist Mr. Heintzleman in direction of Forest Service participation in activities under Article X of the Lumber Code.

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Donald R. Brewster, who left the Forest Service in 1920 to enter the commercial field as an expert in forest utilization and as a consulting forester, was reinstated on September 18. From the time he entered the Service in 1913 until his resignation he worked at the Experiment Stations and the Forest Products Laboratory at Madison, Wisconsin. In his new position, he will act as the representative of Regional Forester Kircher at the headquarters of the Hardwood Manufacturers' Institute in Memphis, Tenn., which is the Code agency for the southern hardwood and southern Appalachian hardwood subdivisions of the Lumber Code Authority.

E. W. Hadley, present Forest Supervisor of the Osceola Forest in Florida, will, after November 1, occupy a similar position at the headquarters of the Southern Pine Association in New Orleans. The Southern Pine Association is the Code agency for the southern pine subdivision of the Lumber Code Authority.

RANGE MANAGEMENT COURSE

A Range Management Course by correspondence is announced by the North Dakota Agricultural College. This course has been prepared by Dr. Herbert C. Hanson, head of the Botany Department of the College.

Dr. Hanson did his graduate work under the noted Dr. J. C. Weaver of Nebraska, and worked with him for several years on various phases of ecology. He was in charge of investigation and teaching work in range and pasture management and ecology for the Colorado

Agricultural College from 1926 to 1930 and since then has been in a similar capacity at the North Dakota Agricultural College.

This course includes a review of botany, and a study of the principles and methods of range management in detail. Forest growth, erosion control and game management are carefully considered. Some time is also devoted to the study of the newer methods of research work in range ecology.

Detailed information may be obtained by writing to the Director of Correspondence Courses, State College Station, Fargo, North Dakota.

DO YOU KNOW ABOUT HIM?

An inquiry has been received by the Washington Office requesting information about Harry Napier, known also as Harry Sanford. The inquirer, Mrs. J. F. Penrod, Box 261, Oak Hill, West Virginia, believes he served as a Forest Ranger in Idaho or Arizona and was burned to death in a forest fire some time in 1910 or 1912. No record of a Harry Napier, or Harry Sanford, is contained in the Washington Office files. Mrs. Penrod will appreciate hearing from anyone who can give her any information about him.

PUBLICITY - DIGNIFIED AND ETHICAL

In solving our problems of the man-caused fire, the devastated forest, the befouled campground, the misused range, we must reach out and stir the thought of the careless, the ignorant, and the indifferent who come into our forests. We must recognize and combat that spirit of vandalism which is an unfortunate characteristic of a portion of the American public. To do this, we must have recourse to publicity - not the flamboyant, circus-poster brand, but publicity dignified and ethical; yet persistent, effective, and continuous. We of the Forest Service cannot do this alone, for our means, our personnel, and our available time are too limited. We must avail ourselves fully of the assistance of the leaders and molders of public thought - the press, the teachers, the school children, and the various public organizations. This assistance will, in most cases, be given gladly if we will only ask for it, but we must supply the energy, the initiative, and the suggestion. -- R-9 Bulletin.

SOAP BASIS FOR ROADS

Soap as the basis of a new method for successfully oiling low cost dirt and gravel roads has been reported to the American Chemical Society by the Missouri State Highway Department. A sample of soil treated with soap in addition to oil was shown to resist water for over a year, whereas the same soil merely oil-treated slaked down in less than a day's time. This high protective effect, in some cases, was obtained with the use of as little oil as 3 percent of the weight of the dry soil along with 0.3 percent soap. Many hundreds of soil samples were experimented with in laboratory tests and it was found that the water resistance and tensile strength of the soil was highest when a soap solution was mixed with the soil. The most successful method of treatment for the experimental road is described as an "oil-soap emulsion". Two distributing trucks, one filled with road oil and the other with an aqueous soap solution were coupled together. Both liquids were spread through separate spray bars, attached to the rear distributor and directed to spray on the same spot of the road surface, thereby forming the desired emulsion at that point.--Chemical Industries, September.

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SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT. ××× THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER.
>
> Theodore Roosevelt

Vol. XVIII No. 24 Washington, D. C. November 19, 1934

EXCERPTS FROM REMARKS BY ASSOCIATE FORESTER E. A. SHERMAN, AT THE FARM CREDIT CONFERENCE LUNCHEON AT RENO, NEVADA, SEPTEMBER 26, 1934

I am in attendance here primarily to receive the views of those who are interested in having grazing privileges on National Forests and public domain recognized as security to Federal land banks in loans to stockmen. I had not expected to myself contribute materially to the discussion. The chairman will bear me out that in response to his request that the Secretary of Agriculture send a representative of the Department to this conference he has been advised that my presence here is for the purpose of receiving the views of anyone interested and that the decision will be made by Federal agencies in Washington after all facts have been secured. ***

This problem is not one peculiar to Nevada or limited to the stock industry of this State. Other stockmen in other States are facing the same problem with the same urgency and the same strength of appeal. Nor are the stockmen who are now being accorded grazing privileges on the National Forests and those who anticipate securing comparable privileges to use other government range lands under the provisions of the Taylor law the only land owners who wish to borrow on their land holding and desire public help to the end that their securities may be accepted as a basis for refunding overdue short term commercial loans with long time loans at lower interest rates and for larger amounts. ***

The problem before us is based upon the plea that the tenure of livestock owners who have been given permits to graze their herds on the National Forests should be extended to cover the period of long term land loans - 30 or 40 years - and should be made definite, absolute, and inviolable until the loan has been completely liquidated. This is urged in the name of the stabilization of the livestock industry.

That stabilization of the industry is desirable is accepted without argument. It is stated as one of the primary purposes of the Taylor law and expressed in its title. It has long been one of the avowed purposes of our administration of the National Forests. Our permits have given to that part of the industry that depend upon National Forest range a stability never before experienced by them and not now enjoyed by the majority of other owners. And from time to time the Service has added to their security as the situation has crystallized so this could safely be done. Annual permits were steadily renewed without reductions as promptly as a reasonably fair division of the range could be made; transfers of permits to qualified purchasers were recognized to the end that stability might be accompanied by a reasonable measure of liquidity; permits were extended to five-year periods and later extended to 10-year periods with liberal provisions for renewals and safeguards against heavy reductions to provide for other stockmen similarly qualified to participate in the use of publicly owned range and an absolute prohibition against any such reduction if during the permit term it had been necessary to make a reduction of ten percent or more to prevent damage to the range.

Stability? Yes, desirable within reasonable and justifiable limits. But I question the justification of a stability which would distribute the right to use the government lands in Nevada for range purposes among the John Doe stockmen who happen to be using these lands now and to petrify those rights so that they become the absolute property of the present user, his sons and grandsons and the heirs of his body forever and to the exclusion of John and Jennie Roe who wish an opportunity to make for themselves by honest industry a place in the sun where they too may live a normal human life. Had such a system of "rights" been put into effect 30 years ago very few of the stockmen who are enjoying National Forest privileges would today have any such preferences for which to plead the addition of a greater stability.

Stability? Yes, but I question if one man should or can be given permission to range on land which belongs to all the people - land that is not his but is the commonwealth of all citizens - 30,000 head of sheep as a "right" to be enjoyed by him and his son and grandsons to the end of time or even for 30 years while a thousand other men, each a citizen and his equal as a co-owner of the nation's property, are denied permission to use any part of that range no matter how great their need.

Again, stability is not a quality which can be guaranteed the numbers of stock a permittee shall be allowed to graze upon public lands in the future regardless of all other considerations while withheld from the fertility of the range and from the quality of justice in range distribution. What avails it to attempt to safeguard the security of a loan of public funds and the prosperity of the industry if this involves attempting to carry upon the land an excessive number of stock and results in overgrazing and the wasting of the very resource upon which both security and prosperity are dependent? The nation may better suffer a loss on a present loan than permanently injure its natural resource in a vain endeavor to secure return beyond the physical capacity of the land to produce.

These are some of the things which the Federal agencies gathered in conference here today must, as public servants, carefully weigh and consider before reaching a conclusion or deciding upon a line of procedure. I am sure it will be done wisely and justly. I am sure that the final decision will be one clearly and evidently giving a square deal to the preference class who naturally would be glad to have their "privileges" given the status of absolute rights (for such is human nature) and who wish that such rights be given by the nation the guaranteed security of a government bond. I do not think it will be possible for either their hopes or expectations to be realized but I am sure they will be given every possible sympathetic consideration consistent with your duties and responsibilities as public officials charged with administering justly great public properties as trustees of the nation as a whole.

FOREST INSURANCE STUDY COMPLETED ON PACIFIC COAST

By H. B. Shepard, Washington

One of the research projects authorized by the Clarke-McNary law and directed toward improvement in the economic status of forest properties, was a study of forest insurance.

Begun first in the Douglas fir region four years ago, this study was later extended to the northern ponderosa pine region of eastern Oregon and Washington, northeastern California, and southern Idaho, the sugar pine-ponderosa pine region of the west side Sierra in California, and the redwood region. The work was handled through the Pacific Northwest Forest Experiment Station and the California Forest and Range Experiment Station.

The purpose of the inquiry has been to determine why the owners of forest properties do not enjoy fire insurance facilities comparable to those afforded other owners and whether means could not be devised for effecting practical and economic forms of insurance cover for them.

The inquiry, which has included a detailed study of forest fire losses of the past twenty years, concludes that, as far as the extent and character of losses are concerned, there is no real reason why forest fire insurance should not function successfully in the territory. Neither does it find any administrative or technical obstacles that appear insurmountable. Furthermore this territory, containing as it does approximately two-thirds of all the merchantable timber in the country and extending over a wide range, can support an insurance organization in itself whether or not such business is done in the rest of the country.

As an example of the favorable aspect of the loss situation the following figures are quoted from the report: The average annual rate of loss established for the Douglas fir region, on a weighted value basis, is 0.047 percent (4.7 cents per $100 of value per year) from ordinary fires, all forest types and tree size classes included; the same figure for the northern ponderosa pine region is 0.119 percent, and for the sugar pine region, 0.133 percent. These two latter regions show no evidence of ever having suffered major conflagrations whereas the fir region has been and very evidently still is strongly subject to this form of loss at periodic intervals. Fortunately it appears that the normal major conflagration interval has been not less than approximately thirty years. Nevertheless the damage has been, on an annual basis, considerably in excess of that caused by the ordinary run of fires. A study of the existing statistics shows that these major conflagration losses in the region amount to an equivalent of approximately 0.080 percent per year. While precise figures are not possible because of inadequate statistical records of previous conflagrations, it appears that they have been causing nearly twice as much loss as the ordinary run of fires and that they put the aggregate annual loss expectation of the fir region between twelve and thirteen cents per $100 of value, that it, approximately equal to that of the two pine regions.

The significance of these figures is that, as far as losses are concerned, there is no reason why forest insurance should not be available to owners in the territory for a maximum average premium rate of twenty-five cents. If everybody were to insure, this rate level would be an entirely practical one. Based on the uncertainty as to the volume and character of business that could actually be done, the inquiry has recommended a rate basis approximately twice this figure, for initial development. It has produced suggested rate schedules, one for each region, which, if used as a basis for insuring all the property in the territory, would yield premium at an average rate of forty-five cents per hundred dollars of insured value (0.45 percent).

It is of course highly essential that specific insurance rates express a measure of the relative hazard incurred by the property insured. Provision for this comprised the greatest single phase of the work. Starting with a basis rate of two and one-half cents, the suggested premium rate schedules provide for charges for a considerable number of factors of hazard increase and also for credits for reduction of hazard. Exposure to causes of fires such as railroads, recreation, and logging calls for proper increase in the rate. Certain physical factors such as composition of the stand, relative density, slope of the terrain, and condition with respect to brush or slash, are known to affect the relative hazard of any given property so, where they are adverse, they must be charged for. Adverse climatic conditions and deficient protection must also be met by proper charges. Where conditions exist that reduce the hazard in ways somewhat out of the ordinary, adjusted credits can be given. The schedules allow for such conditions.

The establishment of a workable rating method is not the only requirement of successful insurance. Administrative and technical features must not be prohibitive. In order to ascertain the facts with respect to these matters the study included inquiries into the principles of forest valuation for insurance purposes, the probable requirements of loss adjustment and policy contract terms, and other administrative features. No evidence was disclosed of difficulties greater than others that have been successfully met in the past in the insurance and timber businesses.

In a few words, forest owners can have fire insurance on their properties if they really desire it in sufficient volume and are willing to support an insurance project. Like many other undertakings, the more support it receives the better it can be, not only as to cost but as to service rendered. What the actual outcome may eventually be can not now be foreseen. The insurance study has at present no definite plans for extension work. What is done along this line will depend to a considerable extent on the interest that is displayed and the apparent demand for such an activity.

THE WORST IS YET TO COME - ALMOST

By P. B. Lister, Washington

Gird your loins you Fire Control men, or possibly you will want to disrobe entirely after reading the following prediction by the Scripps Institution of Oceanography at LaJolla, California of continued drought in the Far West for 1935.

"Higher than average air and sea surface temperatures were observed since the spring of 1934, in agreement with advance indications issued at the end of last March, and a significant increase in solar radiation was recorded at the Scripps Institution.

"The long cycle of about 25 years, the prominent 5 year cycle, and the difference between the late summer and previous winter sea surface temperatures, have been used as before in estimating the probable 1934-35 seasonal precipitation. While the long cycle is rising to a crest due probably before 1940, both the short cycle and sea temperature results combine to indicate a deficient precipitation for 1934-35. However, cycle studies alone indicate a definite increase in precipitation beginning with the 1935-36 season.

"The precipitation thus calculated for the 1934-35 season (Pacific Coast from Southern California to Southern Oregon) ranges from 62% to 85% of the 1916-1933 average, the greater percentages applying to the northern part. In general, these forecasts slightly exceed the 1933-34 observations.

"Resume of 1933-34 Season

"Five regions in California and one in southern Oregon, not including eastern slopes, each a natural geographical division having corresponding precipitation characteristics, were selected to represent a variety of elevations, distances from the coast, and latitudes ranging from Southern California to southern Oregon.

"Except for the Santa Barbara region, the 1933-34 precipitation was below that of the previous 1932-33 season, and below the 1916-1933 average in all of the regions. This agrees well with indications issued October 15, 1933: (as follows)

"'Accordingly, all of the evidence points to less than average precipitation during 1933-34 at all of the regions and even less than that of last season as well, except in the Santa Barbara and Huntington Lake areas. The values of the seasonal precipitation thus calculated range from about 60% to 85% of the average.'"

"Excluding the Portland (Oregon) region where the 1933-34 precipitation was 95% of the average, and one high altitude region of San Diego County where it was 45% of the average, the observed percentages ranged from 67% to 84%, which are included in the forecasted range of 60% to 85%."

THE BRIGHTER FUTURE

(Editorial from Escanaba Press, Michigan)

The conference of officials of the U. S. Forest Service has opened before the eyes of upper peninsula citizens a more hopeful view of the economic and social future of this region.

The glories of the upper peninsula's lumbering and mining history have been dimming. In recent months, there has been a more general recognition of this fact, and the citizens are more disposed to look the situation squarely in the face and immediately do something about it. They have made up their mind that it is utter futility to merely "play ostrich."

The upper peninsula has taken an inventory of its possibilities, and now seems agreed that the most important step toward rehabilitation is through a planned program of land use, with intensified development of the recreational industry as the ace card.

If these civic-minded citizens had attended the conference of U. S. Forest Service officials on Monday, they would have been agreeably surprised to learn that the federal government, through that organization, has been planning the very same program for some months, and , in fact, has already put some of its integral projects into effect.

The U. S. Forest Service has established as its policy the utilization of the recreational possibilities of their forest tracts in the present while time is being allowed for the trees to grow to maturity. Therefore, these forests immediately will be paying dividends to the community through the attractions they will offer to the hunter, fishermen, nature lover and vacationist, and also will be providing employment to a considerable number of people engaged in their development.

The U. S. Forest Service has opened the road to a new day in the upper peninsula. We are beginning to see beyond the trees.

WHEN A DEER HUNTS A MAN - THAT'S NEWS!

By Emma H. Morton, R.6

While leading a group of fire fighters around a fire near Murphy, Oregon, W. W. Shaffer, CCC enrollee of Camp Rand, startled a deer that had been asleep in a clump of brush. Then the chase was on! Mister deer, losing his sense of direction, rushed straight at Shaffer, knocked him down, broke his lantern, and inflicted numerous bruises on his person. The referee gave the decision to the deer, but Shaffer, between the groans is said to have remarked that sometime during the deer season, with the aid of a gun, he might get the decision reversed.

MORE ABOUT UNIFORMS

By Roland Rotty, Medicine Bow

I joined the Service six years ago and have listened to the uniform controversy ever since. If this isn't a private war, let me stick my neck out.

The United States Army does not request its officers to wear uniforms, it compels them to. It holds dress parades to see that they are wearing them. The United States Forest Service holds no dress parades to learn what its members are wearing; it rarely discharges a member for non-compliance.

If a man feels that he can save money by wearing some non-standard article; that the standard article will make him look slightly ridiculous; and that no one in particular cares about what he wears anyway --- do you think that that man will wear a uniorm? Do you think that the Forest Service should be surprised if he doesn't?

The Forest Service will be arguing about the uniform and failing to wear it until the day when some big "brass hat" with the power to do so simply "raises hell" and compels everyone from the lowliest Ranger to the lordliest Supervisor (or Regional Forester) to wear a standard uniform. Many will cry but few will resign when that day comes and the result will be a Forest Service uniformly clad in a uniform uniform.

(Have I got an official uniform? What do you think?)

YE EDITOR DISCOVERS

Not long ago a member of the National Park Service telephoned the Washington Office to inquire as to the very first National Forest or Forest Reserve which had been established, date of its establishment, the State in which located, its area, and the President by whom established. Reference to Grant Bruce, the archivist and historian of the Forest Service, disclosed the following facts:

The very first Forest Reserve created was the Yellowstone Park Timberland Reserve, which fringed the Yellowstone National Park in Wyoming. Its initial area was 1,239,040 acres. It was created by the proclamation of March 30, 1891, amended by proclamation of September 30, 1891, which, however, did not increase the area of the Reserve.

The next to be created was the Timberland Reserve-White River Plateau, in the State of Colorado. This contained an initial area of 1,198,080 acres and was created by proclamation of October 16, 1891.

The third Forest Reserve to be created was the San Gabriel in California. This contained an area of 555,520 acres and was created by proclamation dated December 20, 1892.

The fourth Forest Reserve to be created was the Sierra, the mother of National Forests, in California, which had an initial area of 4,057,470 acres and was created by proclamation of February 14, 1893.

The fifth National Forest, or Forest Reserve, was the San Bernardino, also in California, with an initial area of 737,280 acres. The date of its initial proclamation was February 25, 1893.

All five of these National Forests were created during the administration of President Harrison.

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The combined total of men available on current certificates for selection for Junior Forester and Junior Range Examiner positions number 298; 275 being on the Junior Forester certificate and 23 on the Junior Range Examiner certificate. Requests have been received from the Regions, Experiment Stations, and Shelterbelt for the probational appointment of 260 men. The certificates have been sufficiently cleared to allow appointments to proceed for 251 men; 58 for Research, 5 for Shelterbelt, and 188 for the Regions. Additional appointments will be authorized for the other eligibles requested as rapidly as they can be reached. Of the 251 eligibles so far authorized for appointment 52 are for NIRA work, 179 for ECW, 13 for Acquisition, and 7 for regular positions. With declinations, etc., these selections have completely exhausted the certificates.

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According to a report compiled as of October 20, buildings on 160 permanently abandoned CCC campsites have been transferred in title to the Forest Service, 33 to the Federal Emergency Relief Administration, 5 to the War Department, and 1 to the Tennessee Valley

Authority. No property has been sold and a conservative policy of disposition is being followed in view of the strong possibility that CCC operations will continue.

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The following statement by Donald R. Richberg, executive director of the National Emergency Council, in addressing a Rotary Club luncheon in Chicago, October 10, is of interest as it expresses his views on the place to be taken by Government agencies in the administration of those codes which deal with natural resources, such as the Lumber Code.

"Whenever, in order to conserve natural resources, or to maintain decent wages and hours and to protect a fair return on investments, or to prevent clearly unfair competition, it is found necessary to exert any restraints upon volume of production or price competition, two safeguards should be employed. The first is formulation and administration of such code provisions by those truly representative of a large majority of the volume of business and of the number of separate enterprises engaged therein. The second is a close and detailed supervision of the process of self-regulation by competent and impartial representatives of the public."

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The survival of black locusts planted last spring by ECW erosion camps in western Tennessee and northern Mississippi averages from 90 to nearly 100 percent, according to W. R. Mattoon, who has just returned from a trip to this region. Favorable weather has prevailed since the plantings were made except for a 4 to 5 weeks drought in midsummer. About 3,000,000 locusts and 500,000 shortleaf pines were used in establishing a forest cover as a means of healing bad gullies. In Mississippi planting of each gully included not only black locust but the extensive use of willow, Bermuda grass, Korean lespedza, Japanese honeysuckle, Himalaya blackberry, and some Japanese kudzu vines. Some huge gullies, that erosion experts had declared should never be tackled, have been brought under complete control in one season by the formula of building check dams, grading the banks and planting trees, vines, and grasses.

HOW MANY BOARD FEET IN A CUBIC FOOT?

By J. Elton Lodewick, Pacific Northwest For. Expt. Sta.

Log measurements and lumber tallies recently made in two Willamette Valley mills in Oregon provide the basis for determining the number of board feet of lumber recovered per cubic foot of log volume in logs of different sizes. Sound middle and top Douglas fir logs were studied, and only 32-foot and 40-foot logs were sufficiently numerous to warrant analysis. The average board foot-cubic foot ratio differed but slightly in the two mills, being 7.69 and 7.86 for 32-foot logs and 7.69 and 7.89 for 40-foot logs. The larger ratio in the one mill might be explained on the basis of a narrower kerf and the larger proportion of timbers produced. It was found that the board foot-cubic foot ratio increased with log diameter. In 32-foot logs, for example, the ratio was 6.65 in 8-inch logs and 8.70 in 34-inch logs. In 40-foot logs the ratios for these diameters were 6.90 and 8.45 respectively. Thus there is some evidence that the longer the log the larger the ratio in the small diameters, probably because of the practice of sawing stringers and other thrick stock from these logs.

RELEASE OF YOUNG NORWAY PINE FROM ASPEN COMPETITION

The C.C.C. Camps have made a large number of release cuttings in northern Minnesota. What is the value of such cuttings, and what effects may be expected as a result of them?

One answer to these questions is found in the results of release cuttings in the Birch Lake Norway pine plantation on the Superior National Forest. This plantation was established in 1915. A fire which burned off all vegetation had occurred the previous year. The plantation is a little over a hundred acres in extent. Various ages of stock were used but all were transplants, 2-1, 1-1, and 1-2. The trees were spaced 8 x 8 feet or 680 trees to the acre. After planting no care was given the area.

In 1931 the station made an examination of the area and found that although pine still predominated on one-fifth of the area, aspen and brush had completely claimed one-fourth of the plantation and over half was a mixture of aspen and pine.

In the same year a release cutting experiment was established in the area of mixed aspen and pine, where aspen suckers to the extent of 1400 per acre had grown up and due to their large size were affording considerable competition to the planted pines. At this time there were about 375 Norway pines per acre, which ranged in diameter from 1 to 5 inches and in height from 9 to 28 feet. On one-quarter acre 380 aspen per acre were cut and only the thriftier pines were released. On another quarter acre every planted tree was released, necessitating the cutting of 800 aspen per acre. A third plot was left uncut for comparison.

In 1934, or three years later, the plots were remeasured to determine the effect of the removal of the aspen competition. The diameter growth in the heavily released plot was found to be nearly two and a half times as great as on the check plot and nearly one and a half times as great as on the lightly treated plot. The trees which were suppressed at the time of cutting on the heavy release plot responded so well that they grew in diameter almost as fast as the dominant trees. The height growth was similarly affected but to a lesser degree than the diameter growth.

The heavy release cutting is by far the most effective, both as regards the growth of each individual pine and freedom from future aspen competition. In the moderately released plot some pines are still suppressed and will probably die within a few years. - Lake States For. Expt. Sta.

HOW IS SHE FOR LENGTH?

The following clipping has now been quoted in practically all of the Regional Bulletins. Ye Editor offers the accumulated wax dust from his Dictaphone records to the best rebuttal submitted for publication. Or is it too obvious? The article follows:

"A certain inspector, noted for his fault-finding propensities, was inspecting a newly completed portion of the Trans-Canada Highway. He grumbled at everything - the crown was not high enough, the shoulder too steep, the ditches not deep enough, and so on. The foreman bore it all patiently; then he straightened up to his full height and looked full at the inspector: "How is she for length?" he asked."

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FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

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>
> Theodore Roosevelt

Vol.XVIII No. 25 Washington, D. C. December 3, 1934

THE OGDEN GRAZING CONFERENCE

By Geo. A. Duthie, Washington

The long planned and talked of Grazing Conference at Ogden became history on November 13 when it adjourned after 13 days and nights of speeches, conferences, committee meetings, round table discussions, huddles in the lobby, and extension of remarks by mimeographs. The conference started off with great gusto. Everyone apparently came loaded with information, factual data, and ideas. What he could not carry in his head he brought along on great charts or in his manuscript case. If all this material had been exposed, the conference would still be in session with little hope for its members to get home for the annual turkey dinner.

We started off with an address by the Forester, which was so inspirational that it was mimeographed and sent to all field officers in order that they too might have the benefit of orientation of the National Forest enterprise with the objectives of the New Deal. It was Mr. Rachford's desire that this conference be all-Service in its scope. He therefore wanted all Forest Officers to have current reports of what transpired at the meetings. It was proposed, therefore, that the minutes of each day's meeting would be mimeographed currently and sent to the field, to give the men who could not attend the background of Service-wide conditions as brought out in the discussions. It was a good idea, but it broke down under the mechanics of getting a transcription of the minutes and of mimeographing. We hope to be able to send them out while interest in the conference is still fresh.

The keynote of the conference was: Changed economic and social trends have reaffirmed the original objectives of the National Forest enterprise. The management of the National Forests is closely linked to the problem of national land use planning. It is necessary, therefore, that the policies and regulations under which the National Forests are administered be reviewed in the light of present trends and social conditions to determine whether they provide adequate guidance in a program that will fully redeem the responsibilities of the Forest Service to the people of the nation. The traditional objective of the Service, "the greatest good to the greatest number," is still sound but it must be interpreted as the greatest public good rather than the largest number of individuals.

There must be integration and coordination (two words that became classic at the conference) of the uses of the National Forest resources with the use of other natural resources to the end that the National Forests will make their highest contribution to the national planned economy. For grazing, it meant that the use of the forest ranges must be correlated not only with other uses of the forest but also with the use of other land as worked out by the land use planning boards. It meant, not how many people can be granted grazing privileges, but how many people can be helped to secure reasonable living standards through the use of the grazing privileges - how many families can be decently maintained - how many communities stabilized and rendered self sustaining.

Such correlation of uses naturally brought into the discussion the proper balance that must be maintained with wild life management, recreation, watershed protection, and timber. Some of the discussions, therefore, wandered far afield from dogies, lambs, and grazing plans, but it all entered into the picture of integrated forest land use.

To head the discussion up into some useful results, a Policy Committee composed of the Regional Foresters viewed the policies and regulations in the light of the facts brought out in the discussions and promulgated a policy statement which, when finally reviewed and approved by the Forester, will form the conclusions of the conference. A second committee consisting of the Assistant Regional Foresters in Grazing worked out and defined the procedure that is involved in the proposed changed policies. It also served in an advisory capacity to the Policy Committee.

Much work still remains to put the mass of data and information presented into such shape that it can be used to support the principles and objectives laid down at the meeting. This work will be done during the winter by specialists detailed to Washington for that purpose. A summary of these principles is: (1) The National Forests must make the greatest possible contribution to the maintenance of homes and sound communities, consistent with the permanent maintenance of the forest, forage, and water resources. (2) The grazing use must be integrated with other uses of the Forest and all of this use in turn coordinated with the general land use policy of the nation. (3) The grazing regulations must be kept flexible to permit of policy adjustments that may become necessary to fit changing conditions of the forage resource as well as the changing economic and social trends.

ROAD EROSION CONTROL IN SOUTHERN CALIFORNIA

By R. W. Ayres, R. 5

Road building on the precipitous slopes of the Sierra Madre range in southern California has necessitated the development of a special branch of erosion control, - that of preventing the washing of the roadbeds of the mountain highway system. Roads built across the face of this mountain range are on such steep slopes that the right-of-way is a series of high cuts on the upperside of the road and deep fills on the lower. A panorama of this country from the valleys shows the location of the highways as a series of scallops or alternating sawteeth of raw earth against the background of chaparral cover. The sawteeth or scallops pointing upwards are the sliced off ridges, and those pointing downwards are the deep fills where a gulch is crossed by the right-of-way.

In time nature will cover these raw spots, but in this region it is not wise to wait until this process can be accomplished. Like most regions of low precipitation, when rains do occur they are liable to be torrential and more in the nature of a cloudburst than anything else, and their effect on unprotected soil is disastrous. Therefore, some method and practice had to be developed that would give protection to the great earth fills whose volume sometimes amounts to hundreds of thousands of cubic yards.

Several different methods had been tried to prevent the washing away of the fills. oven wire was laid on the slopes to bind the soil and built into terraces with metal posts, or the surface was sprayed with oil. None of these was entirely successful. Several different organizations are interested, - the State Highway Commission, the Bureau of Public Roads, the C.C.C., the Forest Service, National Park Service, State Division of Parks and the Los Angeles County Forestry Department. All of these had mountain roads to build and were faced with similar problems which had been attacked by various methods.

This problem in soil fixation was turned over to the California Forest Experiment Station of the Forest Service and particularly to C. J. Kraebel of the Erosion and Streamflow Division. By trial and experimentation of several years, Kraebel has finally evolved methods which combine landscape architecture, road construction, and forestry. The art of the landscape engineer is used mainly to cover the unsightly scars on the face of the hills, road engineering is involved in securing the safe drainage of the road in order to prevent washing and erosion by inadequate culverts and drains. Forestry is concerned to discover the most suitable vegetation to cover the bare slopes of the cuts and fills whose roots will bind the soil and whose foliage will protect the soil from the erosive force of the driving rains.

The essentials of this scheme are: (1) mechanical control by means of horizontal barriers formed of cut brush anchored by stakes, and (2) seeding and planting to bind the soil and make the control permanent.

The slopes of the steep fills are first smoothed to an even surface, then beginning at the bottom of the slope a row of stakes about two feet apart is driven into the ground on the contour lines. Above these stakes a trench is dug and packed with branches of brush. These brush "wattles" are covered lightly with earth and form a little terrace. Another row of stakes is set three or four feet above the first and another trench and wattles terrace is built until the whole slope is covered. This method has been found more effective than the high, broad terraces and wire fences which have been used on some southern roads.

The most important step of the work is setting out of living stakes cut either from willow or baccharis, a species of chaparral. Later these stakes send down roots and sprout branches and leaves, thus binding the soil and covering it with a protection of foilage to break the force of the rain.

The next step is the sowing of seed and planting, which are done in the late fall, winter, or spring seasons when there is moisture in the ground. The seed of cereal grain is sown in narrow rows just above the wattles. Between the rows of wattles are planted native trees and shrubs, with seed spots of wild flowers or other native plants and some exotic plants such as Australian salt bush and tree tobacco and other shrubs that are well adapted to this California climate.

It has been found that the grain and the baccharis and willow are an indispensable part of the scheme, because by their vigorous growth they establish immediate soil fixation and hold this control until the slower growing native plants re-establish a permanent forest growth. In the meantime they form a "nurse" cover for native growth.

From a rather haphazard method of road erosion control by several different agencies this has become a science based on several years of experimentation by Kraebel. This year instructions to others who are engaged in this form of conservation were undertaken in two sessions of a school held in the Angeles Forest where over fifty engineers, foremen, and road builders attended a three-day session of lectures and demonstrations in the field where control work is being carried on. Erosion of any kind in southern California is a serious matter, involving loss of property and sometimes lives. This erosion control technique is a valuable contribution to forestry practice.

PROGRESS IN MAPPING

Very considerable progress was made in mapping National Forest areas in Idaho, Utah, and Nevada through availability of Public Works funds. Twelve mapping parties operated out of the Ogden office during the past summer and mapped an area of 1,121,244 acres, or 1,752 square miles. Six of these parties were in Idaho, 3 in Utah, 2 in Nevada, and 1 in Wyoming. One Utah party was employed in Colorado for a short period of time. About 40 men were employed from April till October on the work.

The area mapped by States was: Idaho - 522,931 acres; Nevada - 259,840 acres; Utah - 294,123 acres; Wyoming - 17,470 acres; and Colorado - 26,880 acres.

In recognition of the need for more and better improved and planned public campgrounds, detailed surveys were made for a large number of such areas. Maps of over 12,000 acres of this class were made. These surveys may be used as a basis for landscaping, and placing buildings or other structures at places especially suited to camping. Several hundred summer home sites were surveyed, correlating the location and placement with public campgrounds, so as to get the maximum value for both purposes and harmonize them.

A complete radio installation was made for fire protection and other purposes on the Salmon National Forest in Idaho and at Challis and Hailey, Idaho, and at lookout points on the Challis Forest.

Surveys were made which show the areas that can be seen from 85 forest fire lookout points individually and for the entire number as a group. These surveys are being used to determine placement of fire guards so as to cover a maximum area with a given number of men. Similar studies already concluded have indicated extensive changes and are resulting in better protection from forest fires.

Studies of the area visible from lookouts were made from relief models in certain areas where maps were available from which the models could be made. Twenty such models were made at Ogden during the summer embracing an area of about 17,500 square miles and 23 others of similar size are now in course of preparation. These models show mountain areas in minature. A light suspended on the summit of a minature mountain shows exactly what areas can be seen by a lookout station on that mountain.

Expenditures of Public Works funds for all classes of surveys and mapping work have amounted to about $43,000 to date, nearly all of which went in to salaries and wages. The work will continue on a greatly reduced scale from now until the end of the year. - R. 4 Bulletin

TAX DELINQUENCY THEN AS NOW

By Louis S. Murphy, Washington

The State Auditor of Minnesota, in his Biennial Report for the two fiscal years ending July 31, 1900 (pp.5-6), had this to say about the inequity, nay more, the iniquity, of the tax laws in making it easier and more profitable for the tax evader to allow his property to go delinquent than to bear his share of the community tax burden. This is a fine upstanding statement.

"What is needed is a complete new tax law from the ground up. Tax-evaders and tax-title lawyers have no fault to find with our existing revenue laws, but the people who pay their taxes promptly and bear the entire burden of maintaining the public schools, the township, city, county and state governments, are far from satisfied with the existing conditions pertaining to matters of taxation. Heretofore legislatures have been too considerate of the interests of the tax-evader and have come to his relief by enacting laws that enable him to liquidate his taxes for a tithe of what he justly owed the state and its monor political subdivisions; and our courts have also placed a liberal construction upon the tax laws in the interests of this class of people. It seems to me that some legislation should be enacted in the interest of the tax-payers. The auditor of one of the most populous counties of the state said to me the other day: 'At a meeting of farmers in one of our townships a few evenings ago it was unanimously agreed by those present that each and all of them should refuse to pay taxes until a law was placed upon the statute books that would compel all property owners in the township to bear their proportionate share of the burdens of taxation.'

"As a general rule the average tax-evader is amply able to pay his taxes, but he prefers to fight a tax judgment in the courts. The poor man, or the man in moderate circumstances, usually pays his taxes, no matter how unjust or excessive he may deem them, simply because he cannot afford to indulge in the luxury of litigation."

The same tendencies of leniency have been manifest in the legislation enacted in the recent depression years. Much of it has exceeded all reason in permitting not only the needy (in whose exclusive interest the leniency presumably was extended) but the chronic tax slacker to avoid paying his taxes. What obviously was and still is needed is a material tightening up of the legislation on tax collection procedure but with discretionary power lodged with a responsible official or board to extend leniency in cases of proven distress. We are wasting altogether too much time and sympathy on the forest wrecker who wilfully destroys the timber productive potentialities of his property and then thinks he should have tax concessions to enable him to rehabilitate it.

AMERICAN FORESTRY ASSOCIATION'S ANNUAL MEETING

Appraising the Tennessee Valley project and bringing into relief the major problems of national conservation, the 59th Annual Meeting of The American Forestry Association was held at Knoxville, Tennessee, from October 17 to 20.

More than five hundred foresters, conservationists, and awakened citizens from practically every State in the nation acclaimed the new opportunities for public service with a spirit that promises well for attainment. In a series of conferences at Knoxville; at a forest camp of the Civilian Conservation Corps; before Norris Dam, and the great Smoky Mountains National Park, they appraised the Valley drama that is now being enacted in land reconstruction and social planning, and through addresses and discussions, brought into sharp relief the major national problems and trends of New Deal conservation.

And at the conclusion of their field trips, observations, and conferences, they recorded their reactions in a series of vigorous and positive pronouncements which included the assertions: (1) That forestry must play its full and proper part in advancing and stabilizing the economic and social development of the Tennessee Valley; (2) That the forestry work of the Federal Government must remain centralized in the Department of Agriculture in association with agriculture and other activities in soil conservation and crop production; (3) That the work of the Soil Erosion Service should be made available to all farm lands and farm people by a consolidation of this Service with the work of the Department of Agriculture; (4) That the eastern mountains should be carefully zoned with a view to retaining for this and coming generations ample areas of wilderness and unspoiled natural areas; (5) That emergency funds be made available immediately by the President to save the American elm from destruction by the Dutch elm disease; (6) That the Civilian Conservation Corps should be put upon a permanent basis free from politics and under the ablest supervision that can be found; (7) that the Federal Government in its acquisition of lands for National Forests include in its purchases a larger proportion of merchantable timber; (8) That the few remnants of virgin forests now remaining in the United States should be saved without delay because of their great educational, scientific, recreational, and inspirational value to all the people; (9) That forest research should be adequately expanded in order to assure the success of the present significant increase in forestry activities.

The Conference heard Dr. Arthur E. Morgan, Chairman of the Tennessee Valley Authority, declare that the new economic and social order of America must be the result of design and planning and that President Roosevelt had set up the Tennessee Valley Authority partly as a laboratory in government "where light may be thrown upon governmental, economic and business needs for the whole country."

They heard Colonel Henry Solon Graves, Dean of the Yale Forest School and President of The American Forestry Association, outline the place forestry must play in this design and planning, and envision enlarged economic and social opportunities "where we may find in our home communities an outlet for initiative and energy, without being obliged, as is now often the case, to go to other regions for employment and for a life that will satisfy."

F. A. Silcox, Chief of the Forest Service, told the Conference that the fundamental purpose of public conservation policies was that of making lands affirmatively contribute to the permanent support of their fair share of the nation's population. This, he said ,is in some ways "the biggest and most glorious of all opportunities which have yet confronted us."

Robert Fechner, Director of Emergency Conservation Work, told the Conference that the President had declared that the work of the Civilian Conservation Corps "must go on." Jay N. Darling, Chief of the United States Biological Survey, and Arno B. Cammerer Director of the National Park Service, told of the work and opportunities of their respective departments, while Robert Marshall, Chief Forester of the United States Indian Service, made an inspired plea for the preservation of the nation's remaining wilderness areas. Other speakers included Major General George Van Horn Moseley, Commanding General, Fourth Corps Area, Edward C. M. Richards, Chief Forester Division of Forestry; Earle S. Draper, Director, Division of Land Planning and Housing; G. H. Lentz, Planting Chief and John Snyder and J. H. Nicholson, Erosion Engineers of the Tennessee Valley Authority.

One of the high-lights of the meeting was a radio broadcast over the coast-to-coast network of the National Broadcasting Company from TVA Camp 16, Civilian Conservation Corps Co. 252, at LaFollette, Tennessee. - Erle Kauffman, American Forestry Assn.

RECREATION

(From an article by Lewis E. Staley in Pennsylvania
Department of Forests and Water Service Letter)

Pennsylvania has not stopped with growing timber. We cannot stop there. That in itself is worthwhile, but in addition, the forests of the State are providing much needed recreation facilities for the enjoyment of our people. They are already putting large sums into the State Treasury and have only just begun to produce revenue. We are not setting aside these areas in their entirety as parks, but we are using the most desirable places as outing grounds for all the people of the State.

The spirit of recreation is nationwide and the annual expenditure for its enjoyment does not run into mere millions but into billions of dollars. Recreation is a rapidly expending phase of American life. It is a reflection of material well-being and an increasing appreciation of spiritual value.

It is believed that the only way to give all of the people of the country work is to shorten the work day, and pay for that shortened day the same amount of money as was received for the former 10 or 12 hour day. A five or six hour day does not seem to be impossible in the near future. In fact, it appears to be the only way out of this depression. We must provide something for the people of Pennsylvania to do while away from their regular jobs.

Recreation is a necessary adjunct to their happiness. So long as recreation is freely indulged in by all classes of people, it represents a sound and healthy economic and social life. The continued enjoyment of wholesome outdoor life and the use of leisure time rest upon the maintenance of accepted standards of American citizenship. ***

The people have arrived at the place where they will demand more money for park facilities. They have a right to expect them and I have no doubt that the Legislature will eventually accede to their demands.

The Legislative Sessions of 1931 and 1933 provided machinery for the still further development of park facilities for the people of the Commonwealth, but the Department of Forests and Waters cannot satisfactorily develop this program alone. We need the influence and moral and financial support of every agency in the State looking toward the better development of recreational facilities. We have already received liberal and outstanding cooperation to that end from every section of the State. ***

There is peace, quiet, and contentment in the forest. The stillness of the woods is a stimulant to the tired soul. Quiet is nature's great medicine. In the forests of our Pennsylvania hills there is that peace and contentment that should become a part of our human nature.

MORE ABOUT THE UNIFORM

By H. N. Wheeler, Washington

Will the articles ,some serious but mainly facetious, being written about the Forest Service uniform place any one wearing that uniform in such a position that he will be held up to riducule? It would seem so. The uniform is dignified and adequate for all situations. The CCC boys in working clothes are in suitable uniform as much as they are when in the dress uniform. Khaki clothes are used by Forest Officers while doing rough work. It is suitable for the purpose and sets a man apart as belonging to the Forest Service. Other people, wear khaki also, but there is little difficulty in distinguishing CCC boys or army men in uniform whether it be khaki or some other variation. So, any uniform worn regularly by Forest Officers would soon become distinctive and would lend dignity to the Service and give the wearer much more self-respect. The spasmodic use of any uniform fails to identify the one wearing it with any particular organization. Forest Officers may be mistaken for Park Rangers or Western Union messengers because they wear the uniform all the time and Forest Officers, as a whole, are rarely seen in uniform, even when on important missions. Let's use the uniform more or discontinue its use altogether, making it an infraction of the rules to be seen in one.

MEDICINE BOW REPORTS LARGEST TIMBER SALE IN ITS HISTORY

A contract has been consummated with the Wyoming Timber Company of Hanna, Wyoming, involving 114,000,000 board feet of timber, which is the largest amount of stumpage involved in any single contract in the history of the Medicine Bow Forest. The estimated value of stumpage is approximately one-quarter million dollars. The area covers about 18,000 acres in the Douglas Creek Unit in the vicinity of Keystone. The Wyoming Timber Company, under the direction of Manager Sam Thompson, is pushing work to complete camps before a heavy snow sets in, and the Forest Service has concentrated a number of rangers to mark the timber to be cut. Forest Rangers Roland Rotty from the Pole Mountain District, Mark Ratliff from the Snake River District, and George Lang from the Foxpark District have been detailed to assist Ranger Lerchen, who will be in charge of the sale on the Keystone District, to accomplish the timber marking work before heavy snowfall. It is anticipated that additional men will be detailed to this work.

The Company expects to make some three hundred thousand ties this winter, which will be driven down Douglas Creek and the North Platte River to the loading plant at Fort Steele, for transportation by rail to the tie plant at Laramie next spring.

According to a rough ratio established some years ago, indicating the relation between the stumpage received by the Government and the total amount expended by the Company, this sale will involve a total expenditure of over two million dollars in the vicinity of the Medicine Bow Forest and the tie plant at Laramie, for the making ,marketing, and treating of the product.

The timber in the area now included in the main portion of the Medicine Bow Forest and the Pole Mountain District has been a "meal ticket" for the local communities, since the first ties were cut for the construction of the Union Pacific about 1866. - L. E. Coughlin, Medicine Bow.

HATTON TRANSFERRED TO SHELTERBELT

John H. Hatton, Assistant Regional Forester in Region 2 is being transferred to the Shelterbelt project with headquarters at Lincoln, Nebraska. Hatton has been with the Forest Service for a third of a century - a longer period of service than any other member of the Denver office. He entered the Forest Service July 1, 1901 as a Student Assistant.

Hatton was raised on a South Dakota farm and one of his earliest recollections is that of planting trees on Arbor Day on the homestead and tree claim of his father in Browne County, which is included in the shelterbelt. At the first opportunity, he plans to return to the old homestead to see the trees that he helped to plant almost a half-century ago. Hatton also made the first collections of forest tree seeds for planting and nursery purposes which were made in the forests of Colorado and New Mexico. As a pioneer tree planter and seed collector, he will contribute a life-time of experience to the project.

Hatton worked his way through South Dakota State Agricultural College, graduating with the degree of B.S. In his early days in the Forest Service he had a great variety of work extending to practically all of the Western States, as well as in portions of the East. He examined and recommended boundaries for many of the present National Forests in the West including the Cochetopa and San Isabel National Forests in Colorado. He waded cypress swamps in South Carolina in connection with cruising and appraisal of land, and examined and reported on the condition of western public lands for the Public Lands Commission which was appointed by Theodore Roosevelt. On December 1, 1908 he was appointed Chief of Grazing for the California Region and held this position until May 16, 1915, when he was transferred to Denver as Assistant Regional Forester in charge of Range Management. He has served continuously in this capacity since then, except during the past year when he was on detail in the Washington Office for several months.

Lawrence J. Staab, Assistant to the Purchasing Agent in the Denver office, is also leaving with Hatton for Lincoln, where he will handle purchasing for the Shelterbelt office. Staab has served as executive assistant on a number of Colorado Forests and in the Regional Office during the past eight years. - Region 2

PATENT ISSUED FOR MAPBOARD

The Patent Office recently issued letters patent (No. 1,978,476) on the movable, constant-orientation mapboard invented by L. H. Reineke, of the Northeastern Forest Experiment Station. This device makes it possible for permanently mounted maps, such as are used in lookout stations, to be held in constant orientation while the map is shifted a limited distance to permit making alidade sights without obstruction by corner posts, windows sashings, or other structural members of the lookout cabin. The invention is dedicated to the public by Mr. Reineke and may be used by persons in the United States without the license of the inventor or the payment of any fee. Those interested in this device should communicate with the Northeastern Station. - Harry Irion.

EARLY CALIFORNIA FIRES

"Jan. 14, 1835. ** The town (Santa Barbara) is certainly finely situated, with a bay in front, and an ampitheatre of hills behind. The only thing which diminishes its beauty is, that the hills have no large trees upon them, they having been all burnt by a great fire which swept them off about a dozen years before, and they had not yet grown up again. The fire was described to me by an inhabitant, as having been a very terrible and magnificient sight. The air of the whole valley was so heated that the people were obliged to leave the town and take up their quarters for several days upon the beach.**" - From "Two Years Before the Mast" by Richard Henry Dana, Jr.

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SERVICE
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1934
HYNIRA
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SHELTERBELT
Merry Christmas
and Happy New Year
C.L.Taylor
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SERVICE BULLETIN

Vol. XVIII No. 26 Washington, D.C. December 17, 1934

GREETINGS

It seems incredible, so quickly and pleasantly has the time passed, that almost a year has gone by since my return to the Forest Service. And I must confess to a feeling of amazement, during this year, at the unmistakable evidences of accomplishment by, and progress within, the organization.

I find, for example, that National Forest properties have grown enormously; that they have been improved and developed far beyond what anyone thought, even a few years ago, could possibly have been accomplished by this time; that uses have increased by leaps and bounds and that planned, multiple-use has become firmly established as a sound, workable principle of that National Forest administration which is designed to assure "the greatest good to the greatest number in the long run."

The Forest Service has, of necessity, expanded; it has had new responsibilities and obligations thrust upon it with almost bewildering rapidity; it has met those responsibilities and obligations with a versatility, a resourcefulness and a determination for public service that makes me proud to be a member, again, of the organization. I feel, therefore, that we have every reason to approach this Yuletide of 1934 with the true holiday spirit.

Not only because of what has been accomplished, but because of the greater opportunities for service which lie ahead. For I am convinced that the coming year will bring such opportunities; that those opportunities, earnestly and legitimately capitalized, will go far toward developing our forest empire so that it may contribute, with security and stability, to the permanent support of its fair share of our country's population.

And this is, after all, our real job. We make every-day talk about silviculture, fire protection, selective logging, forest economics and sustained yield. They are fine, all of them; they are necessary; they are vital. We must recognize, however, that they are, after all, but tools; instruments which we must employ, wisely and well, to accomplish the real, the fundamental, job which beckons.

The year during which I have again been with you renews an unshakable conviction that the Forest Service recognizes its job; that it will not be bound by the confines of a physical, National Forest property; that it will continue in its real devotion to public service, in its willingness and ability to make honest and critical self analysis, to maintain and extend its democratic relationships with the public whom it serves, and to retain and extend its constructive, group spirit of leadership and worth-while accomplishment.

And so, to every one, a Merry Christmas and a Happy New Year.

F. A. SILCOX.

"LEST WE FORGET"

By E. A. Sherman

Christmas 1934 is the thirtieth Christmas anniversary to be observed by the Forest Service since Congress placed the National Forests in our custody. This holiday of happiness, good will, and peace has always been observed in a more or less formal way in the Washington Office, in the Regional Offices, and wherever two or three of our membership have been gathered together in the name of forest conservation and service to mankind.

Our observance of Christmas has always been simple, democratic, and thoughtful. I hope it will always be so. All have participated upon the same basis, with preference given to the younger generation. There has been no display; gifts have been simple and inexpensive, as becomes those who live by the labor of their own brain and hands. To the older members it is properly a time of retrospection and of rededication to our ideals of public service.

The Forest Service was made custodian of the National Forest properties by Theodore Roosevelt February 1, 1905. They were turned over with the mandate that the land should be "devoted to its most productive use for the permanent good of all the people and not for the temporary benefit of individuals and companies," with instructions that "the dominant industry will be considered first, with as little restriction to the minor industries as may be possible", and with the final admonition that "where conflicting interests must be reconciled the question will always be decided from the standpoint of the greatest good of the greatest number in the long run." These were the stated terms of the trust placed upon the shoulders of the Forest Service when the nation's forest reserves were placed in our hands to protect, administer, and conserve.

Yuletide is a fitting time to lay aside the mantle of pride and ask ourselves, in all humility, have we kept the faith, have we indeed been true to our trust and faithful to our great stewardship? It would be comforting indeed if we could always answer in an unqualified affirmative. Under the Forest Service the National Forests have grown from an area of less than fifty million acres to over one hundred and sixty-two million acres, and are still expanding at an accelerated rate. Thousands upon thousands of miles of road, truckways, trails, and fences have been constructed. Hundreds of lookout houses on the mountain tops, supplemented by the radio, intricate systems of telephones and fire breaks, constitute a fire protection system undreamed of a generation ago. Thousands of young men, the cream of our nation's youth, are carrying on stand improvement cuttings, planting, and other cultural activities from hundreds of civilian conservation camps.

The physical betterment of our forest properties has been advanced far beyond our wildest dreams. There remains, however, the supreme test of real accomplishment; that is, the extent to which these properties contribute to the general welfare of the 130 million people to whom they belong and who pay for their protection and improvement.

For thirty years the Forest Service has successfully manned the wall of conservation in defense of our natural resources against assaults by selfish special or local interests in every form and by every subterfuge that ingenuity and cupidity could invent. The line still holds unbroken. Therefore, in this Christmas festival of 1934 we are merry, not swollen with pride, but, as servants of the common people, glad that the general welfare may still be our first and greatest concern.

AGENTS OF ST. NICHOLAS

By L. F. Kneipp

In the Christian countries which celebrate the festival of Christmas and cherish that embodiment of happiness and good cheer known to them as St. Nicholas or Santa Claus, the popular thought is that the patron saint is aided by fairies, sprites, or gnomes in his labors to create and purvey those tangible possessions which add so much to both the material and spiritual comfort and beauty of life. But the realism of adult life brings knowledge that the aides of St. Nicholas are very real and very human, and that the fruits of their labors are not arrayed around the base of a Christmas tree on a single day in each year, but are unceasingly manifest in a myriad of ways throughout every day of the year.

Thus it happens that the lookout, perched in his tower on a wind-swept peak, or the smoke-chaser pitting the last ounce of his energy against time and tremendous physical obstacles, or the fire-fighter laboring with smoke-choked lungs and reddened eyes to conquer the menace of destruction and death, or the timber estimator surmounting one physical handicap after another to keep his lines true, or the Ranger dedicating all of his physical and mental powers to the solution of problems as much social and psychological as they are material and economic, or the Supervisor working out involved and complicated adjustments of situations vitally influencing human welfare and progress - all are very real agents of that spirit, call it what you will, which represents the highest objectives of human aspirations.

These men subconciously may sense their true relationship to the kaleidoscopic pattern of community or national life, but in the humdrum atmosphere of routine demands and the mechanistic restrictions of organized procedure they are in danger of losing the true perspective of the meaning and consequences of their effort and sacrifice. Those who avoid that loss, who think through their part in the plan to its end-result, are the happiest and the most effective, since a realization of what their work really means will give to it a zest and an inspiration through which it will attain its fullest flower.

THE CHRISTMAS TREE CROP

By E. E. Carter

A neighbor of my boyhood days had a woodlot. He was then a childless old man. One of his satisfactions of life was to furnish each year a soft-foliaged, sweet smelling balsam fir for the church Christmas tree. It was part of the "object of the owner," controlling the protection and management of his forest property. He planned the production of these trees for years ahead, and carefully preserved small balsam firs of promise when cutting fuelwood, fence posts and other wood products. These Christmas trees were recognized by him as an important part of his forest crop, although he got no money for them. They gave him a big return through the enjoyment of the children of others.

The National Forest Christmas tree crop is growing in amount and importance. We talk about many good things in connection with it; how we thin young stands to their benefit; how the influence of careful cutting for Christmas trees on the National Forests is spreading so that the buying public demand trees which carry official (Federal or State) red tags; how we meet the protests against the cutting of small trees for Christmas greens by both example and precept as to doing it with benefit rather than injury to the forest; and even how we are obtaining a revenue while benefiting the forest. In the press of duties we grumble about both the added work of handling these Christmas tree cuttings and the exasperating ways of the cutters. I notice, however, that every man who has anything to do with the job seems to get out of it something of the satisfaction of that old State-of-Mainer. There is little talk about it - the satisfaction is a personal matter. But when the truck load of trees goes slithering down the icy or muddy road, a look goes after it to represent the vision of a day made brighter, of more joy to groups of children, of added significance to the celebration of a symbolic festival. The Christmas tree crop is worth while.

THE TOY INDUSTRY — A SERIOUS BUSINESS

By A. O. Benson, Forest Products Laboratory

Toys — two hundred million dollars worth in the United States this year, in times that are far from being prosperous. Toys by the billion every year. Evidently, toys must be a serious business for some big folks as well as for little ones.

Relatively speaking, the United States is a novice in the toy manufacturing game, for only a few years ago practically our entire supply of toys was imported from Germany, Switzerland, Japan, and a few other countries. Along came the World War upsetting trade relations and in the shuffle the toy business fell right into our lap. We quickly discovered that we could make as good toys as anyone else and that there was no reason why we should continue importing 90 percent of our requirements. Actually our toys are superior to the imported article. Foreign toys are typically designed for amusement. Much of the product is flimsy and expensive at any price. American made toys are made for a dual purpose — amusement and education. Painstakingly the designers reproduce the latest in streamlined trains, automobiles, airplanes.

Inasmuch as the toy business furnishes a good market for wood we as members of the Forest Service are naturally interested. It is heartening to know, too, that here is a market that is at least fairly stable. The spirit behind it is perennial and in spite of times when there must be curtailment of luxury spending the youngsters have a way of coaxing forth most of the loose dimes.

Toy manufacture is jumpy with respect to the type of toys produced from year to year. One year the yo-yo is all the rage. Every small boy — and not a few of the big ones fell for it — has to have a yo-yo. So the toy factories throughout the country work feverishly to supply the spontaneous demand for yo-yos. Along comes miniature golf club sets, then skill ball, the jig-saw puzzles, and so on. Above all, toy manufacturers must be versatile.

The term "toys" covers a wide field. Starting with the baby's rattle one can run up by advancing stages through blocks, tinker toys, roller skates, steam engines, meccano, and what not. And where are we to stop? The man, who is but a boy grown tall, must still keep playing. But a man's toys are designated "sporting and athletic goods." In general, however, we may assume that toys are children's playthings — balls, tops, blocks, carts, wagons, sleds, games, dolls, doll furniture, dishes, etc. Above all the child is an imitator. His toys are imitations of the full-sized implements and what-nots he observes his elders using and to him his toys are every bit as important as the possessions of big folks.

Toys naturally fall into a number of classes, namely, educational, architectural, musical, furniture, natural history, games, vehicles — water, land, and air. Choose any toy you wish and you will find that it will fit somewhere in this classification. Educational toys especially have received a big impetus in the last few years. The nursery school and pre-school years, common preliminaries in these modern high-speed days, present wonderful opportunities to use toys to guide a child into habits and channels of thought that will simplify his initiation into the real business of school life.

Important as is wood in the manufacture of toys it does not escape the sharp competition of substitute materials — metal, rubber, celluloid, compositions, and paper. Each of these has its advantages and disadvantages. Wood versus metal for small carts and trains of the hand type presents a good chance for comparison. Wood is light, warm, and friendly to the small hand of a child and if well made it is satisfactorily durable. Iron is heavy, cold, and hard — and here is where the lady of the house enters sternly into the picture — it is absolutely ruinous to furniture, woodwork, and floors. In the face of this factor alone it is difficult to comprehend how metal toys for the small tot have come to occupy such prominence on the toy counter. In part the answer lies in the facility with which metal lends itself to standardization, mass production, and in consequence low manufacturing costs. Nevertheless, wood will undoubtedly hold its own in the younger age groupings. Great stress is being laid on toys that are primarily intended for simple muscular coordination along with amusement. In this field wood is first and there is no second. The toys are of the put-on and pull-off variety, boards with dowels and sockets, wagons with a load of barrels that fit, nested cubes, cylinders, and the like, all brightly and harmlessly colored. Silly, of course, but do little hands itch to manipulate them!

Periodic surveys of the wood-using industries show that 30 or more woods are used in making toys, but in each survey five woods constitute about three fourths of the total amount used. In 1918 the woods in order of quantity consumed ranked as follows: (1) basswood; (2) maple; (3) beech; (4) birch; (5) white pine; in 1928 white pine was first, followed by basswood, birch, maple, yellow poplar; in 1933 birch led with white pine, maple, ponderosa pine, and beech following. Viewed from the standpoint of properties the reason for the popularity of these woods for toys is not hard to understand. In maple and beech we have woods with strength, easily worked into handles, wagon and sled parts, furniture parts, etc., where the breakage hazard is great. Paper birch, always a favorite among turning woods, goes extensively into turned and shaped parts where smoothness and a fair degree of strength are essential. The lighter woods, basswood, pine, and yellow poplar, are used in sled and wagon bottoms, bodies of toy vehicles, blocks, and wherever weight is objectionable.

Walnut and mahogany are used in some of the more expensive toys, game boards, and the like where appearance rather than utility is a factor. Generally speaking, however, utility is the basis for choice of wood for toys. Appearance of the natural wood loses importance under bright coatings of blue, yellow, and red paint. Dash and brilliance are lures which win the child's fancy, so the paint department of a toy factory at first glance looks like the inside of a rainbow.

A material that undoubtedly has a large future in toy making is plywood. It lends itself especially to jig-saw figures, wheels, and other parts in which wood of ordinary grain is easily broken. An artistic variety of "pully" toys with oscillating figures taken from popular fables are being manufactured from plywood in Wisconsin and are making their first appearance in the department stores this season.

That the younger generation is air-minded is shown in the increase in the use of balsa, the light wood from tropical America which seems indispensable in making "flyable" model airplanes. The 1918 wood-using industry report shows no balsa used for toys. By 1928 it had jumped from nothing to a consumption of 155,000 board feet, and by 1933 to 208,000 board feet. The sudden popularity of toy boats was quickly reflected in the 1928 survey by a demand for 400,000 board feet of redwood and cedar. The boat flurry has settled back to a normal level and as a result redwood and cedar do not loom up as especially important.

A point to bear in mind as regards the toy industry is that it is by no means a dumping ground for cheap or waste wood. White pine, basswood, birch, and maple are up near the top of the price list. They are woods that give service. So-called waste incident to the manufacture of furniture and other products requiring large cuttings is used to a considerable extent for toy stock but previous to going to the toy factory it is carefully remanufactured to suitable dimensions. It is a fallacy to assume that because toy parts are small it is practical to use a miscellaneous assortment of kinds, shapes, and sizes of wood.

In 1918 during the war period we opened up with a bang and used about 29 million board feet of wood for toys. Entering into the spirit of the "roaring twenties" toy manufacturers stepped up their production and by 1928 were calling for 39½ million board feet, an increase of 36 percent. In the meantime, however, the wood-using industries as a whole decreased their wood consumption by 25 percent. Musical instruments fell off 58 percent, handles 55 percent, laundry appliances 54 percent, and so on. In the face of such setbacks the gain by toys was nothing short of remarkable.

And finally the depression. Wood used for toys in 1933 amounted to about 21½ million board feet -- only 54 percent of the 1928 consumption. But, on the other hand, a preview of figures not yet published indicates that the consumption of the wood-using industries as a whole last year was only 32 percent of the 1928 amount. Thus, 54 percent for toys and 32 percent for the whole group of industries still leaves toys looking like a pretty stable proposition. It is probable that the decrease in the use of wood is not the best guide to what happened in the toy industry. A drop of 46 percent in the use of wood does not prove that children had to be content with 46 percent less toys. Folks with pocketbooks flatter than usual turned to cheaper toys of wood substitutes, and there was more toy repairing in home workshops and by community welfare groups. When times pick up the toy trade will undoubtedly make good its temporary setback. Indications are that future demand for toys will exceed anything we have had in the past. Private, school, community, and public playgrounds are more and more in evidence. They call for toys as well as standard playground equipment. Shorter working days and more leisure time should result in increased demand for toys.

Lastly, where do toys come from? Children are told "from Santa's workshop away up North." Well, such an answer to a child in Florida would not be so far wrong, for Massachusetts, Wisconsin, New York, Pennsylvania, Michigan, and Ohio lead in toy manufacture at the present time. Winchendon, Mass., is known as the "toy town of America." Actually, New York City manufactures more toys than Winchendon, but on account of the tremendous size of New York and the mass output of its many and varied manufactures the toy industry is but a minor detail. To Winchendon toys are what furniture is to Grand Rapids or copper to Butte.

Toys or toy parts are made commonly throughout New England. Suitable woods -- birch, beech, maple, white pine, basswood, and others -- are close at hand. Wood turning, always an important industry in New England, goes hand in hand with toy manufacture. "Yankee ingenuity" designs clever toys that keep the child happy -- and dad broke.

HOLLY AND CHRISTMAS

By Perkins Coville

How our American custom of using holly at Christmas time became established is not entirely clear. The American holly was, however, the most attractive broadleaf evergreen available to the early colonists for winter indoor decoration, and the use of holly was customary in Europe. It appears that the Romans sent holly sprays to their friends during the festival of Saturnalia as emblems of good will. The early Christians are said to have used holly for decorating their places of worship. This may have been partly to conciliate the Romans, but it served to associate holly both with the Christian religion and with the observance of a religious festival.

Many persons probably do not realize the large number of hollies that exist and how widespread a geographical distribution the genus has. Sargent speaks of some 175 species, but Rehder in his "Manual of Cultivated Trees and Shrubs" mentions more than 300 species of _Ilex_. Sargent states that _Ilex sp_. are widely distributed over all temperate and tropical parts of the world except the western United States, Australia and New Zealand, Tasmania and New Guinea; that in the early Tertiary period species of _Ilex_ existed in the Arctic regions, and that there were several species in western North America which have now disappeared.

A large number of holly species are definitely decorative, but only a few have characteristics that meet our idea of "Christmas holly" - deep green leaves with prickles, and red berries. The American holly Ilex opoca, the English holly Ilex aquifolium or varieties of it known as the Dutch or Select (French) English, and the Chinese holly Ilex cornuta, all grow very attractive sprays suitable for Christmas greens.

The American holly originally was distributed from Massachusetts to Missouri and south to Florida and Texas, as a component of our forests. Destructive harvesting has destroyed most of the natural holly plants in New England. Natural holly trees in the woods can be conserved and improved by fire protection and the cutting away of competing vegetation.

The South American holly is the one most valuable to man, as it furnishes the mate or yerba de mate known as Paraguay tea. This tea is stimulating, and immoderate indulgence in it is said to produce the same inebriated condition as does alcohol.

Members of the Ilex genus produce a bitter principle known as Ilicin which has pharmaceutical properties. The fruit of some species will act as an emetic. Wood of many species is used in limited quantities for turnery and inlaying.

The collection of Christmas-holly sprays brings in about $250,000 annually to the residents of the Eastern shore of Maryland and Delaware, which is the center of the native holly production at present. The growing of English holly varieties on "holly ranches" on the lower Columbia River and the southern portion of Puget Sound has developed as a distinct activity in recent years.

DELVING INTO HISTORY OF NATIONAL FOREST LOCALITIES

By B. F. Heintzleman

Many National Forest localities have had a very colorful history, and those Forest Officers who scan the early records for the material and search out the exact spots of outstanding events often reap a rich harvest. Like an enthusiasm for game, an acquaintance with local history adds zest to the forester's job.

The writer's field of labor for many years has been Alaska, and, like the Southwest and California, that Territory had a very eventful history under white domination before it came under the sway, and partook of the customs, of the English speaking peoples. Moreover the country has not changed so radically but that many traces of the earlier influences still remain which add to our interest in its earlier life. The present Tongass and Chugach Forests include the areas which were the head and principal nerve centers of the early attempt to subdue the wild North Pacific lands of America.

The great outstanding feature of Alaska history under the Russians is that it is largely the history of a powerful man--Alexander Baranof, head of the Russian-American Fur Company, from its inception in 1790 to 1818. For foresight, determination, energy, and knowledge of the job at hand, he certainly was unequalled by any white man of those who sought, in the age of exploration and colonization of the 1700's and 1800's, to conquer the various Pacific regions for their governments, or for private profit. Had his efforts been supported by the Tsar and the Russian nobility who were the shareholders of the company, it is more than likely that Russia would have become the permanent master of all lands on both sides of the Pacific Ocean north of San Francisco Bay and Japan and including the Hawaiian Islands.

Coming from the lower classes in Russia, Baranof rose to be a prominent fur trader in Siberia, and, when private fur trading in Russian America had reached a deplorable condition, he was selected to head up a monopoly of the business under the sponsorship of the Russian rulers and to be the supreme dictator of his country's possessions in America. Leaving his family, which he was never to see again, he spent nearly 30 years in Alaska